Index to Volume 29

Journal of the Aerospace Sciences

Numbers 1–12, January-December 1962

No. 1, January, pages 1–120
No. 2, February, pages 121–248
No. 3, March, pages 249–376
No. 4, April, pages 377–504
No. 5, May, pages 505–632
No. 6, June, pages 633–760
No. 7, July, pages 761–888
No. 8, August, pages 889–1016
No. 9, September, pages 1017–1144
No. 10, October, pages 1145–1272
No. 11, November, pages 1273–1400
No. 12, December, pages 1401–1512

The material has been indexed in two sections: under a subject heading and by author's name.

*An asterisk following an item identifies it as having appeared in the Readers' Forum section.

Subject Index

ACOUSTICS, NOISE

Response of a Nonlinear Flat Panel to Periodic and Randomly-Varying Loadings, Y. K. Lin 1029
A Unified Treatment of "Variation of Parameters" and "Differential Expressions" Methods in Trajectory Prediction and Error Analysis, Li Shu Wen 61

AERODYNAMICS AND FLUID MECHANICS

Comparison of Flow-Direction Probes at Supersonic Speeds, F. W. Barry (Vol. 28, pp. 750–752)*
Comment, Frederick O. Smetana* 625
Author's Reply* 626
Energy-Equation Approximations in Fluid Mechanics, Arthur W. Goldstein* 358
The Influence of Two-Dimensional Stream Shear on Airfoil Maximum Lift, Robert J. Vidal 889
The Limitations of the Hydraulic Analogy, E. V. Laitone (Vol. 28, pp. 656–657)*
Comment, W. H. T. Loh* 620
Author's Reply* 622
Roll Damping of a Fleet Ballistic-Missile Submarine, Frank J. Regan* 230
Transient Response of Fluid Systems, James E. Broadwell and Andrew G. Hammitt* 877

Bodies (Cones, Plates, etc.)

Angle of Attack and Sideslip from Pressure Measurements on a Fixed Hemispherical Nose, Earl R. Keener* 1129
Approximate Determination of Position of the Sonic Line for a Blunt Body in Hypersonic Flow, M. A. Rahman* 1485
Axisymmetric Viscous Flow Past Very Slender Bodies of Revolution, M. Yasuhara 667
Blunt-Cone Pressure Distributions at Hypersonic Mach Numbers, Andrew F. Burke and James T. Curtis* 237
Blunt-Nose Inviscid Airflows with Coupled Nonequilibrium Processes, J. Gorden Hall, Alan Q. Eschenroeder, and Paul V. Marrone 1038
Boundary-Layer Transition in the Presence of Streamwise Vortices, Itiro Tani and Hiroyuki Komoda 440
Calculation of Potential Flow About Bodies of Revolution Having Axes Perpendicular to the Free-Stream Direction, John L. Hess 726
Comparison of Static Pressures on Flared Bases in Nonuniform Hypersonic Flow as Calculated by Exact and Approximate Methods, Martin R. Fink* 1012
The Compressibility Transformation and the Turbulent-Boundary Layer Equations, O. R. Burggraf 434
A Correlation of Nose-Bluntness-Induced Pressures on Cylindrical and Conical Afterbodies at Hypersonic Speeds, Robert A. Greenberg* 359
The Downstream Influence of Mass Transfer at the Nose of a Slender Cone, Robert J. Cresci and Paul A. Libby 815
The Drag of Elongated Bodies Over a Wide Reynolds Number Range, J. M. Robertson and M. E. Clark 842
The Effect of Skin Friction on Optimum Minimum-Drag Shapes in Hypersonic Flow, H. Kennet* 1486
Effects of Cooling on Boundary-Layer Transition on a Hemisphere in Simulated Hypersonic Flow, Roger Dunlap and A. M. Kuethe 1454
Experimental Effect of Bluntness and Gas Rarefaction on Drag Coefficients and Stagnation Heat Transfer on Axisymmetric Shapes in Hypersonic Flow, B. V. Rhodes and D. E. Bloxsom 1429
Experimental Lift and Drag of a Series of Glide Configurations at Mach Numbers 12.6 and 17.5, Richard E. Geiger 410
First-Order Slip Effects on the Laminar Boundary Layer Over a Slender Body of Revolution With Zero Pressure Gradient, Jay M. Solomon* 1136
Heat Transfer to Slender Cones in Hypersonic Air Flow, Including Effects of Yaw and Nose Bluntness, Charles E. Wittliff and Merle R. Wilson 761
Hypersonic Approximation of the Minimum Semiapex Angle Giving Subsonic Flow Behind an Attached Shock, E. S. Love* 1124
The Inviscid Flow Field in the Wake of Hypersonic Bodies, K. S. Wan* 1488
Laminar Heat-Transfer Distribution on Oblate Ellipsoidal Noses in Hypersonic Flow, Marcel Vinokur* 113

Local Heat Transfer to a Yawed, Infinite, Circular Cylinder in Laminar, Compressible Flow, Daniel Weiss* 482
Magnetohydrodynamic Flow Past a Semi-Infinite Plate, D. Meksyn 662
A Method of Obtaining an Approximate Solution of the Falkner and Skan Boundary-Layer Problem, Eleanor M. James* 234
Modified Crocco-Lees Mixing Theory for Supersonic, Separated, and Reattaching Flows, Herbert S. Glick 1238
Nonisothermal Flow Past a Flat Plate With Suction, Rattan Sagar Nanda* 885
Nose Shape for Minimum Drag in Hypersonic Flow, E. Large* 98
A Note on the Inviscid Streamlines at the Surface of a Yawed Cone in a Supersonic Stream, Joseph E. Willett* 375
A Note on the Transient Temperature Distribution in an Orthotropic Sphere Due to Aerodynamic Heating, B. Venkatraman, Sharad A. Patel, and Frederick V. Pohle* 628
On Blunt-Body Heat Transfer at Hypersonic Speed and Low Reynolds Numbers, Antonio Ferri, Victor Zakkay, and Lu Ting* 882
On Hypersonic Viscous Flow Over an Insulated Flat Plate With Surface Mass Transfer, C. L. Tien 1024
On Similar Solutions for Strong Blast Waves and Their Application to Steady Hypersonic Flow, Eric F. Brocher 694
On the Limiting Yaw Angle for Stone's Yawing-Cone Theory, Frank W. Barry* 613
On the PLK Method and the Supersonic Blunt-Body Problem, Roberto Vaglio-Laurin 185
On the Study of Stagnation Points on a Circular Cylinder in Presence of a Straight Wall in an Ideal Fluid, S. R. Majumder* 502
Prediction of Ogive-Forebody Pressures at Angles of Attack, Earl R. Keener* 1013
The Pressure Gradient Induced by Shear Flow Past a Flat Plate, M. B. Glauert 540
Quasi-Steady Viscous Flow Near the Stagnation Region of an Infinite Cylinder, R. E. Kelly* 627
Real-Gas Laminar-Boundary-Layer Skin Friction and Heat Transfer, R. E. Wilson 640
Reduction of Supersonic Flow to Subsonic by Flow Around a Concave Bend, G. J. Briley and F. Chorlton* 354
Shock-Standoff Distance for Spherical Bodies at High Mach Numbers, P. Roy Choudhury* 745
Shock-Wave Profiles Over Ellipsoidal-Nosed Bodies in Hypersonic Flow, Carlton S. James and James E. Terry* 1128
Shroud Design for Simulating Hypersonic Flow Over the Nose of a Hemisphere, Roger Dunlap* 757
Simplified Application of the Second-Order Shock-Expansion Method Using the Hypersonic Similarity Rule, H. C. Vetter and H. A. Mehaffey* 493
Some Features of Supersonic and Hypersonic Flow About Blunted Cones, Stephen C. Traugott 389
Stagnation-Point Shock-Detachment Distance for Flow Around Spheres and Cylinders in Air, Alphonso Ambrosio and Andrzej Wortman* 875
Stagnation-Point Shock Detachment of Blunt Bodies in Supersonic Flow, Herbert W. Ridyard and Elsie M. Storer* 751
Stagnation Point Viscous Hypersonic Flow, F. J. Stoddard* 1138
Subsonic Potential Flow Past a Sphere Inside a Cylindrical Duct, William L. Haberman* 356
Theory for Supersonic, Two-Dimensional, Laminar, Base-Type Flows Using the Crocco-Lees Mixing Concepts, Josef Rom 963
Thermal Effects on a Transpiration Cooled Hemisphere, Albert F. Gollnick, Jr. 583
Thermal Boundary Layer of a Stream Over a Flat Plate, F. Contursi and A. Pozzi* 883
Transition in the Viscous Wakes of Blunt Bodies at Hypersonic Speeds, Henry Hidalgo, R. L. Taylor, and J. C. Keck 1306
Transition Measurements on Cones in Free-Flight Ballistics-Range Tests, W. C. Lyons, Jr., and Norman W. Sheetz, Jr.* 352
The Transition to Turbulence in a Boundary Layer on a Blunt Cone in Supersonic Flow, Ruth H. Rogers 501
Turbulent Diffusion in the Wake of a Blunt Nosed Body at Hypersonic Speeds, Lester Lees and Leslie Hromas 976
Two-Dimensional and Axisymmetric Rotational Flows Past a Transonic Corner, Manfred P. Friedman* 503
Two Remarks on Cones at Angle of Attack in High Supersonic Flow, Ingeborg Ginzel* 497
Viscous and Inviscid Nonequilibrium Gas Flows, Robert F. Whalen 1222
The Wave Behind an Oscillating Vehicle, Seymour L. Zeiberg 1344

Boundary Layer

Air Emissivity and Shock-Layer Radiation, P. D. Thomas* 477
Analogy Between Turbulent Reacting Jets and Boundary Layers, Norman G. Kulgein* 96
Application of a New Matrix Method to Vibration Analysis of Structures, Bertram Klein* 350
The Application of the Reference-Enthalpy Method to Friction Formulas, Neal Tetervin* 493
Axisymmetric Viscous Flow Past Very Slender Bodies of Revolution, M. Yasuhara 667
Boundary-Layer Energy Equation, Ward O. Winer* 750
Boundary-Layer Transition in the Presence of Streamwise Vortices, Itiro Tani and Hiroyuki Komoda 440
Boundary-Layer Transition at Supersonic Speeds—Three-Dimensional Roughness Effects (Spheres), E. R. van Driest, and C. B. Blumer 909
The Compressibility Transformation and the Turbulent-Boundary Layer Equations, O. R. Burggraf 434
The Diffusion of Injected Gas in Separated Flow, Hartley H. King* 473
The Effect of Adverse Pressure Gradients on the Characteristics of Turbulent Boundary Layers in Supersonic Streams, George H. McLafferty and Robert E. Barber 1
The Effect of Slip, Particularly for Highly Cooled Walls, Nicholas Rott and Michael Lenard 591
Corrections and Comments* 1391
Effects of Cooling on Boundary-Layer Transition on a Hemisphere in Simulated Hypersonic Flow, Roger Dunlap and A. M. Kuethe 1454
An Experimental Test of Compressibility Transformations for Turbulent Boundary Layers, William Squire* 237
Comment, Artur Mager* 752
Author's Reply* 1261
First-Order Slip Effects on the Laminar Boundary Layer Over a Slender Body of Revolution With Zero Pressure Gradient, Jay M. Solomon* 1136
Fundamentals of Boundary-Layer Heat Transfer With Streamwise Temperature Variations, M. A. Biot 558
Comment, Myron Tribus* 1482
Author's Reply* 1483
Heat Transfer in the Laminar Boundary Layer With Ablation of Vapor of Arbitrary Molecular Weight, C. R. Faulders 76
Heat Transfer Through Laminar Boundary Layers on Semi-Infinite Cylinders of Arbitrary Cross Section, D. E. Bourne and S. Wardle 460
Helium Injection Into the Boundary Layer at an Axisymmetric Stagnation Point, Herbert Fox 921

The Homogeneous Boundary Layer at an Axisymmetric Stagnation Point With Large Rates of Injection, Paul A. Libby ... 48
Laminar, Transitional, and Turbulent Heat Transfer to a Cone-Cylinder-Flare Body at Mach 8.0, Victor Zakkay and Clifton J. Callahan ... 1403
Leading-Edge Attachment in Transonic Flow With Laminar or Turbulent Boundary Layers, Dennis G. Mabey ... 1034
Measurements of Stagnation Point Heat Transfer at Low Reynolds Numbers, Antonio Ferri and Victor Zakkay ... 847
A Method of Obtaining an Approximate Solution of the Falkner and Skan Boundary-Layer Problem, Eleanor M. James* ... 234
Modified Crocco-Lees Mixing Theory for Supersonic, Separated, and Reattaching Flows, Herbert S. Glick ... 1238
Nonisothermal Flow Past a Flat Plate With Suction, Rattan Sagar Nanda* ... 885
A Note on Separation in Quasi-Two-Dimensional, Laminar, Boundary-Layer Flow, Ajit Kumar Ray* ... 1481
A Note on the Similarity Solution for the Three-Dimensional, Incompressible, Laminar Boundary Layer, Ajit Kumar Ray* ... 1392
Note on the Three-Point Boundary-Value Problem for the Blasius Equation, E. Dale Martin* ... 1133
On Ando's Calculation of the Boundary Layer With Suction, Jack D. Dennon* ... 1268
On Calculation of the Laminar Separation Point, and Results for Certain Flows, Morris Morduchow and Stanley P. Reyle* ... 996
On the Coupling Between Heat and Mass Transfer, O. E. Tewfik and C. J. Shirtliffe* ... 1009
On the Effectiveness Concept in Mass-Transfer Cooling, O. E. Tewfik* ... 1382
On Hypersonic Viscous Flow Over an Insulated Flat Plate With Surface Mass Transfer, C. L. Tien ... 1024
On Inflexion Points in Natural-Convection Profiles, B. Gebhart* ... 485
On a Particular Class of Similar Solutions of the Equations of Motion and Energy of a Viscous Fluid, Barry L. Reeves, and Charles J. Kippenhan ... 38
On Viscous Wakes of Yawed Infinite Cylinders and Analogous Jets, Martin H. Bloom* ... 492
Pressure Distribution in Regions of Step-Induced Turbulent Separation, John Vasiliu ... 596
The Pressure Gradient Induced by Shear Flow Past a Flat Plate, M. B. Glauert ... 540
Real-Gas Laminar-Boundary-Layer Skin Friction and Heat Transfer, R. E. Wilson ... 640
Sensitivity of Skin Friction and Drag to the Distribution of Suction or Blowing, E. M. Sparrow and E. R. G. Eckert* ... 104
Shock-Wave Profiles of Sharp Wedges in Helium Flow at M = 28.9, Robert H. Johnson* ... 229
Similar Solutions for Merging Shear Flows, Nicholas Rott, and R. J. Hakkinen* ... 1134
Slip Flow With Axial Pressure Gradient, A. Pozzi and P. Renno* ... 1393
Some Effects of Injection of Foreign Gases in a Decelerating Laminar Boundary Layer in Supersonic Flow ... 1250
Some Remarks on Similarity in Turbulent-Boundary-Layer Theory, William Squire* ... 1002
Summary of a Study of the Use of Reference States in Predicting Mass-, Momentum-, and Energy-Transfer Rates in Laminar Flows, Eldon L. Knuth* ... 1131
Supersonic Flow at the Surface of a Circular Cone at Angle of Attack, J. E. Willett (Vol. 27, pp. 907–912, 920)
Comment, B. A. Woods* ... 481
Author's Reply* ... 482
Theory for Supersonic, Two Dimensional, Laminar, Base-Type Flows Using the Crocco-Lees Mixing Concepts, Josef Rom ... 963
Thermal Boundary Layer of a Stream Over a Flat Plate, F. Contursi and A. Pozzi* ... 883
Thermal Effects on a Transpiration Cooled Hemisphere, Albert F. Gollnick, Jr. ... 583
Transition Measurements on Cones in Free-Flight Ballistics-Range Tests, W. C. Lyons, Jr., and Norman W. Sheetz, Jr.* ... 352
The Transition to Turbulence in a Boundary Layer on a Blunt Cone in Supersonic Flow, Ruth H. Rogers* ... 501
Transition in the Viscous Wakes of Blunt Bodies at Hypersonic Speeds, Henry Hidalgo, R. L. Taylor, and J. C. Keck ... 1306

Hydrofoils

Munk Integrals for Fully Cavitated Hydrofoils, Blaine R. Parkin ... 775

Internal Flow

An Approximate Solution for Laminar Channel Flow of a Conducting Fluid under Transverse Magnetic Field, Fujihiko Sakao* ... 246
Asymptotic Eigenfunctions for Turbulent Heat Transfer in a Pipe, C. V. Sternling and C. A. Sleicher* ... 109
Comment, L. S. Dzung* ... 885
Authors' Reply* ... 885
Axisymmetric Magnetohydrodynamic Channel Flow, F. D. Hains and Y. A. Yoler ... 143
Consideration of Energy Separation for Laminar Slip Flow in a Circular Tube, Robert M. Inman* ... 1014
Constant-Electric-Field and Constant-Magnetic-Field Magnetogasdynamic Channel Flow, Gordon C. Oates* ... 231
Couette-Type Flow of a Viscoelastic Fluid Through Porous Walls, P. N. Kaloni* ... 1399
The Effect of Entrance Velocity on the Flow of a Rarefied Gas Through a Tube, Hartley L. Pond ... 917
Force-Balance Determination of Supersonic/Hypersonic Combustion-Inlet Performance Levels, Paul H. Kutschenreuter, Jr.* ... 1389
Formation of Rings in a Liquid Film Attached to the Inside of a Rotating Cylinder, Walter R. Debler and Chia-Shun Yih* ... 364
Heat Transfer to Laminar Flat-Duct Slip Flow With Internal Heat Generation, Robert M. Inman* ... 1266
A Note on Design of a Two-Dimensional Contracting Channel, Y. S. Nanjunda Swamy* ... 246
On the Close Relationship Between Turbulent Plane-Couette, and Pressure Flows, R. A. Burton* ... 1004
On the Magnetic Field in MGD Channel Flow, Robert R. Berlot* ... 612
On Porous-Wall Couette Flow Under Slip-Flow Conditions, Robert M. Inman* ... 1123
On Secondary Flows in Jet-Driven Vortex Tubes, M. L. Rosenzweig, D. H. Ross, and W. S. Lewellen* ... 1142
The Pressure Gradient Induced by Shear Flow Past a Flat Plate, M. B. Glauert ... 540
On Shearing Flow Between Porous Coaxial Cylinders, N. T. Dunwoody* ... 494
Shock Response to Upstream Disturbances, Roy Gundersen* ... 226
Some Explicit Solutions for Constant-Temperature Magneto-Gasdynamic Channel Flow, Robert R. Berlot* ... 748
Steady Flow of Conducting Fluids in Channels Under Transverse Magnetic Fields, With Consideration of Hall Effect, Itiro Tani ... 297
Subsonic Potential Flow Past a Sphere Inside a Cylindrical Duct, William L. Haberman* ... 356

Nozzles, Orifices, Jets

Analogy Between Turbulent Reacting Jets and Boundary Layers, Norman G. Kulgein* 96
Application of Hollow Cathodes to Hypersonic Research, J. T. Yen* 496
Approximate Design of Sharp-Cornered Supersonic Nozzles, M. A. Rahman* 481
The Effect of an External Pressure Gradient on a Separated Region, J. N. Roos and A. F. Charwat* 370
Flow Separation in Nozzles, Robert H. Page* 110
A Force Normal to the Axis in an Asymmetric Supersonic Nozzle, Syoji Kageyama* 472
Improved Numerical Solution of the Blasius Problem with Three-Point Boundary Conditions, W. J. Christian (Vol. 28, pp. 911–912)*
Comment, D. C. Leigh* 625
Author's Reply* 625
Inviscid-Incompressible-Flow Theory of Static Two-Dimensional Solid Jets in Proximity to the Ground, T. Strand 170
Jets in a Medium of Different Properties, A. Pozzi* 471
Laminar Jet Mixing of an Electrically Conducting Fluid in the Presence of a Magnetic Field, N. Riley* 624
Note on the Three-Point Boundary-Value Problem for the Blasius Equation, E. Dale Martin* 1133
On the Laminar Mixing of Annular Jets, L. G. Napolitano* 605
On the Numerical Solution of the Blasius Problem With Three-Point Boundary Conditions, Kaoru Toba* 480
On the Theory of Mixing of Fluid Streams, Harold J. Hoge* 118
Comment, Ernest D. Kennedy* 609
Author's Reply* 609
On Viscous Wakes of Yawed Infinite Cylinders and Analogous Jets, Martin H. Bloom* 492
The Optimized Ejector-Nozzle Thrust Augmenter, Richard M. Knox* 470
Performance and Force Coupling Effects Due to Turning Vanes in an Annular Jet, A. M. Jackes* 1483
Solution of the Incompressible Free-Streamline Problem by Electrical Analogy, M. S. Cahn* 351
A Study of Jet Deflection by the Hydraulic Analogy, J. W. Hoyt* 752
A Technique for Determining the Nozzle-Flow Properties of Air in an Equilibrium, Nonequilibrium, or Frozen State, Lovick O. Hayman, Jr., and Roger B. Stewart* 245
Test-Section Conditions Generated in the Supersonic Expansion of Real Air, J. William Reece* 617
Turbulent Mixing of a Rocket Exhaust Jet With a Supersonic Stream Including Chemical Reactions, John Vasiliu 19
The Use of the Howarth Transformation in Turbulent, Compressible Flow, William T. Snyder* 235

Shock Waves

Approximate Determination of Position of the Sonic Line for a Blunt Body in Hypersonic Flow, M. A. Rahman* .. 1485
Conditions Behind a Shock in Real-Gas Flow, B. N. Pridmore Brown* 484
Correlation Equations for Determining the Equilibrium Conditions Behind a Strong Shock, S. A. Waiter and P. Roy Choudhury* 618
The Downstream Influence of Mass Transfer at the Nose of a Slender Cone, Robert J. Cresci and Paul A. Libby ... 815
Dusty-Gas Flow Through an Oblique Shock Wave, Kinge Okauchi* 230
Hypersonic Approximation of the Minimum Semiapex Angle Giving Subsonic Flow Behind an Attached Shock, E. S. Love* 1124
The Inviscid Flow Field in the Wake of Hypersonic Bodies, K. S. Wan* 1488
Magnetohydrodynamic Mach Cones, E. Cumberbatch 1476
Modified Crocco-Lees Mixing Theory for Supersonic Separated and Reattaching Flows, Herbert S. Glick 1238
Normal-Shock Relations in Magnetohydrodynamics, Roy M. Gundersen* 997
Normal-Shock-Wave Parameters for Equilibrium Air, Charles E. Wittliff* 1012
On the Influence of Secondary Waves From the Intersection of Shocks of the Same Family, Paul E. Fitzgerald, Jr.* 755
On the Inviscid Tail Efficiencies of Slender Configurations at Hypersonic Speeds, Charles P. Hoult* 748
On the PLK Method and the Supersonic Blunt-Body Problem, Roberto Vaglio-Laurin 185
The Propagation of a Nonuniform Magnetohydrodynamic Shock Wave Into a Moving Monatomic Fluid, Roy M. Gundersen 1421
Real-Gas Effects on Oblique Shock Detachment Angles, C. W. Hartsell and W. J. Hayes* 116
Reduction of Supersonic Flow to Subsonic by Flow Around a Concave Bend, G. J. Briley and F. Chorlton* 354
Shock Response to Upstream Disturbances, Roy Gundersen* 226
Shock-Standoff Distance for Spherical Bodies at High Mach Numbers, P. Roy Choudhury* 745
Shock-Wave Profiles of Sharp Wedges in Helium Flow at M = 28.9, Robert H. Johnson* 229
Shock-Wave Profiles Over Ellipsoidal-Nosed Bodies in Hypersonic Flow, Carlton S. James and James E. Terry* 1128
On Similar Solutions for Strong Blast Waves and Their Application to Steady Hypersonic Flow, Eric F. Brocher 694
Simplified Application of the Second-Order Shock-Expansion Method Using the Hypersonic Similarity Rule, H. C. Vetter and H. A. Mehaffey* 493
Some Features of Supersonic and Hypersonic Flow About Blunted Cones, Stephen C. Traugott 389
Stability of Compressible Boundary Layers Induced by a Moving Wave, Simon Ostrach and Philip R. Thornton .. 289
Stagnation-Point Shock Detachment of Blunt Bodies in Supersonic Flow, Herbert W. Ridyard and Elsie M. Storer* 751
Stagnation-Point Shock-Detachment Distance for Flow Around Spheres and Cylinders in Air, Alphonso Ambrosio and Andrzej Wortman* 875
Stagnation Point Viscous Hypersonic Flow, F. J. Stoddard* 1138
A Static-Pressure Probe for the Interaction Region of a Shock Wave and Boundary Layer, John E. Rode and Victor J. Skoglund* 1262
Theoretical Prediction of the Transonic Characteristics of Airfoils, C. S. Sinnott 275
A Theory of Transonic Aileron Buzz, Neglecting Viscous Effects, Wiktor Eckhaus 712
Turbulent Diffusion in the Wake of a Blunt-Nosed Body at Hypersonic Speeds, Leslie Lees and Leslie Hromas 976
Two-Dimensional and Axisymmetric Rotational Flows Past a Transonic Corner, Manfred P. Friedman* 503
Two Remarks on Cones at Angle of Attack in High Supersonic Flow, Ingeborg Ginzel* 497
Viscous and Inviscid Nonequilibrium Gas Flows, Robert F. Whalen 1222

Sloshing of Liquids

Analysis of Liquid-Propellant Mode Stability of a Multitank Ballistic Booster Vehicle, Arthur L. Greensite 130

Breathing Vibrations of a Circular Cylindrical Shell With an Internal Liquid, Ulric S. Lindholm, Daniel D. Kana, and H. Norman Abramson ... 1052
Membrane Volume Changes for Elliptical Domes, Richard J. Sylvester ... 140
Theorems for Change of Volume and Moments of Volume of Elastic Tanks Subject to Arbitrary Internal Pressures, John R. Spreiter* ... 1140

Superaerodynamics

The Effect of Entrance Velocity on the Flow of a Rarefied Gas Through a Tube, Hartley L. Pond ... 917
Effect of Variable Heat of Recombination on Stagnation-Point Heat Transfer, S. J. Fenster and R. J. Heyman* ... 1267
Experimental Effect of Bluntness and Gas Rarefaction on Drag Coefficients and Stagnation Heat Transfer on Axisymmetric Shapes in Hypersonic Flow, B. V. Rhodes and D. E. Bloxsom ... 1429
On the Propagation of Transverse Disturbances in Rarefied-Gas Flows, J. G. Logan* ... 1011

Turbomachinery

An Actuator-Disc Analysis of Inlet Distortion and Rotating Stall in Axial-Flow Turbomachines, H. Yeh (Vol. 26, p. 739)*
Comment, J. Dunham* ... 361
The Free-Surface Water-Table Analog of Compressible Source-Vortex Flow, Alfred F. Stahler* ... 998
An "Inside" Hydraulic-Analogy Experiment, J. W. Hoyt* ... 99
Partial-Admission Turbines, Gunnar O. Ohlsson ... 1017
Theories of Predicting Partial-Admission Losses in Turbines, Michael D. C. Doyle* ... 489

Vortices

The Free-Surface Water-Table Analog of Compressible Source-Vortex Flow, Alfred F. Stahler* ... 998
Nonequilibrium Vortex Flow in a Dissociating Gas, Robert A. Greenberg* ... 1483
The Pitching-Moment Coefficient of a Jet-Flapped Thin Airfoil, J. C. Erickson, Jr.* ... 1489
On Secondary Flows in Jet-Driven Vortex Tubes, M. L. Rosenzweig, D. H. Ross, and W. S. Lewellen* ... 1142
Vortex Flow in a Dissociating Gas, K. C. Wang* ... 623
Comment, C. R. Faulders* ... 1485
Author's Reply* ... 1485

Wings, Airfoils

An Approximate Solution of the Lifting Problem of Thin Airfoils at Sonic Speed, Iwao Hosokawa (Vol. 28, pp. 588–590)*
Addendum ... 604
Boundary-Layer Displacement and Leading-Edge Bluntness Effects in High-Temperature Hypersonic Flow, H. K. Cheng, J. G. Hall, T. C. Golian, and A. Hertzberg (Vol. 28, p. 353)
Errata* ... 355
Development of a Quasi-Steady Approach to Flutter and Correlation With Kernel-Function Results, S. I. Gravitz, W. R. Laidlaw, W. W. Bryce, and R. E. Cooper ... 445
Effect of Wing Geometry on Volume and Weight, B. Saelman* ... 1390
Flutter Analysis of a Supersonic Ring Wing, Peter Crimi and Donald Earl Ordway ... 578
The Influence of Two-Dimensional Stream Shear on Airfoil Maximum Lift, Robert J. Vidal ... 889
Leading-Edge Attachment in Transonic Flow With Laminar or Turbulent Boundary Layers, Dennis G. Mabey ... 1034
A Lifting-Surface Theory for Jet-Flapped Wings, A. Das* ... 499
A Magnetofluid-Dynamic Kutta-Joukowsky Condition, E. Cumberbatch, L. Sarason, and H. Weitzner* ... 244
A Note on Application of Transonic Linearization to an Airfoil With a Round Leading Edge, Iwao Hosokawa* ... 1395
On Slender Airfoil Theory for Nonequilibrium Flow, Inge L. Ryhming ... 1076
On the Stress Measurement of Sweptback Wing Structures by Resin Model, Shin-ichi Suzuki* ... 117
The Pitching-Moment Coefficient of a Jet-Flapped Thin Airfoil, J. C. Erickson, Jr.* ... 1489
Research on Unsteady Flow (The Sixth Minta Martin Lecture), W. P. Jones ... 249
Similar Solutions for Merging Shear Flows, Nicholas Rott and R. J. Hakkinen* ... 1134
Theoretical and Experimental Investigation of Thermal Stresses in Hypersonic-Aircraft Wing Structures, Herbert Tramposch ... 719
Theoretical Prediction of the Transonic Characteristics of Airfoils, C. S. Sinnott ... 275
A Theory of Transonic Aileron Buzz, Neglecting Viscous Effects, Wiktor Eckhaus ... 712
Three-Dimentional Effect of Flutter in a Real Fluid, Wen-Hwa Chu* ... 374

AEROELASTICITY

An Aerodynamic Analysis for Flutter in Oseen-Type Viscous Flow, Wen-Hwa Chu ... 781
Boundary-Layer Displacement and Leading-Edge Bluntness Effects in High-Temperature Hypersonic Flow, H. K. Cheng, J. G. Hall, T. C. Golian, and A. Hertzberg (Vol. 28, p. 353)
Errata* ... 355
Damping of Flexural Vibrations of Sandwich Plates, Yi-Yuan Yu ... 790
Development of a Quasi-Steady Approach to Flutter and Correlation with Kernel-Function Results, S. I. Gravitz, W. R. Laidlaw, W. W. Bryce, and R. E. Cooper ... 445
The Elasticity Solution of a Long Circular-Cylindrical Shell Subjected to a Uniform, Circumferential, Radial Line Load, Jerome M. Klosner ... 834
The Evaluation of Response of Aeroelastic Systems to Transient and Random Turbulence by Kernel-Function Techniques, Arthur K. Cross* ... 239
Flutter Analysis of a Supersonic Ring Wing, Peter Crimi and Donald Earl Ordway ... 578
Flutter Analysis of Circular Panels, J. V. Rattayya ... 534
Comment, F. A. Lee* ... 1123
Free Vibration of a Damped Elliptical Plate, R. P. McNitt* ... 1124
Influence of Large Amplitudes on Flexural Vibrations of a Thin, Cylindrical, Sandwich Shell, Hugh N. Chu* ... 376
A Method for Analyzing the Vibrations of Plates, Arthur W. Leissa* ... 475
A Method of Four-Point Interpolation Especially Adapted for Treating End Conditions of Wings and Other Elastic Surfaces, J. A. Griffin (Vol. 28, p. 161)*
Comment, Thomas P. Giammo* ... 490
A Note on the Application of the Quasi-Steady Supersonic-Flow Theory to Flutter Analysis, Malcolm H. Lock* ... 1133

On the Aeroelastic Stability of Orthotropic Panels in Supersonic Flow, Adolf Abraham Perlmutter* 1332
Propeller-Nacelle Whirl Flutter, John C. Houbolt and Wilmer H. Reed, III 333
Research on Unsteady Flow (The Sixth Minta Martin Lecture), W. P. Jones 249
Response of a Nonlinear Flat Panel to Periodic and Randomly-Varying Loadings, Y. K. Lin 1029
Response of Bars and Plates to Boundary-Layer Turbulence, D. H. Tack and R. F. Lambert 311
Similarity Laws for Aerothermoelastic Testing, John Dugundji and John M. Calligeros 935
Small-Slip Solutions of the Viscous-Flow Equations, J. A. Laurmann* 360
Stability of Compressible Boundary Layers Induced by a Moving Wave, Simon Ostrach and Philip R. Thornton .. 289
Supersonic Panel Flutter of a Cylindrical Shell of Finite Length, Maurice Holt and Sainsbury L. Strack (Vol. 28, pp. 197–208)
Remarks, John W. Miles* 115
Authors' Reply* 115
A Theory of Transonic Aileron Buzz, Neglecting Viscous Effects, Wiktor Eckhaus 712
A Theory of the Two-Dimensional Laminar Boundary Layer Over a Curved Surface, K. T. Yen and K. Toba (Vol. 28, p. 877–884)
Comment, J. S. Murphy* 366
Author's Reply, K. T. Yen* 367
Note, K. Toba* 367
Three-Dimensional Effect of Flutter in a Real Fluid, Wen-Hwa Chu* 374
The Transverse Vibrations of A Flat Spinning Membrane, James G. Simmonds 16
Unsteady Frequency Response Functions for Use in Power Spectral Analysis, Max Chernoff and Herbert L. Rothman 121

AEROSPACE RESEARCH

Capillary Phenomena in Free Fall, G. M. Ardes and J. E. McNutt* 103
Element Reliability Over a Life History, Howard E. Leve* 1400
A Note on a Soap-Film Paradox, Ronald A. Gellatly* 1487
Proposed System for the Direct Conversion of Re-Entry Thermal Energy Into Electric Energy, R. W. Truitt* ... 478
Research on Unsteady Flow (The Sixth Minta Martin Lecture), W. P. Jones 249
Results of Experiments in Space (The Twenty-Fifth Wright Brothers Lecture), Robert Jastrow 377
Shock Waves in Solid Craters, Norman Davids and Y. K. Huang 550
A Two-Inch Launcher for Aerodynamic Models, Arnold E. Seigel* 1383
Viscous Torque in a Spherical Gas Bearing, T. F. Yeh 160

AEROTHERMOCHEMISTRY

Blunt-Nose Inviscid Airflows with Coupled Nonequilibrium Processes, J. Gorden Hall, Alan Q. Eschenroeder, and Paul V. Marrone 1038
Dusty-Gas Flow Through an Oblique Shock Wave, Kinge Okauchi* 230
The Homogeneous Boundary Layer at an Axisymmetric Stagnation Point With Large Rates of Injection, Paul A. Libby 48
A Modification of the Busemann Ellipse for a Reacting Gas, Alan J. Chapman, Herbert Beckman, and J. R. Baker* 1010
Nonequilibrium Vortex Flow in a Dissociating Gas, Robert A. Greenberg* 1483
A Reaction-Rate Parameter for Gasdynamics of a Chemically Reacting Gas Mixture, M. Lenard* 995
Stagnation-Point Heat Transfer in Partially Ionized Air, R. C. Rozycki and S. J. Fenster* 1490
Turbulent Mixing of a Rocket Exhaust Jet With a Supersonic Stream Including Chemical Reactions, John Vasiliu 19
The Use of the Howarth Transformation in Turbulent, Compressible Flow, William T. Snyder* 235
Vortex Flow in a Dissociating Gas, K. C. Wang* 623
Comment, C. R. Faulders* 1485
Author's Reply* 1485

AEROTHERMODYNAMICS, ABLATION

Air Emissivity and Shock-Layer Radiation, P. D. Thomas* 477
Application of Inequality Constraints to Variational Problems of Lifting Re-Entry, Ely S. Levinsky 400
The Application of the Reference-Enthalpy Method to Friction Formulas, Neal Tetervin* 493
Axisymmetric Viscous Flow Past Very Slender Bodies of Revolution, M. Yasuhara 667
The Compressibility Transformation and the Turbulent-Boundary-Layer Equations, O. R. Burggraf 434
Consideration of Energy Separation for Laminar Slip Flow in a Circular Tube, Robert M. Inman* 1014
The Downstream Influence of Mass Transfer at the Nose of a Slender Cone, Robert J. Cresci and Paul A. Libby ... 815
Determination of Lift or Drag Programs to Minimize Re-Entry Heating, Arthur E. Bryson, Walter F. Denham, Frank J. Carroll, and Kinya Mikami 420
The Effect of Slip, Particularly for Highly Cooled Walls, Nicholas Rott and Michael Lenard 591
Corrections and Comments* 1391
Effect of Variable Heat of Recombination on Stagnation-Point Heat Transfer, S. J. Fenster and R. J. Heyman* .. 1267
Effects of Cooling on Boundary-Layer Transition on a Hemisphere in Simulated Hypersonic Flow, Roger Dunlap and A. M. Kuethe 1454
Experimental Effect of Bluntness and Gas Rarefaction on Drag Coefficients and Stagnation Heat Transfer on Axisymetric Shapes in Hypersonic Flow, B. V. Rhodes and D. E. Bloxsom 1429
Fundamentals of Boundary-Layer Heat Transfer With Streamwise Temperature Variations, M. A. Biot 558
Comment, Myron Tribus* 1482
Author's Reply* 1483
A Graphical Approximation for Temperatures and Sublimation Rates at Surfaces Subjected to Small Net and Large Gross Heat-Transfer Rates, Ernst W. Adams 360
Heat Transfer in the Laminar Boundary Layer With Ablation of Vapor of Arbitrary Molecular Weight, C. R. Faulders 76
Heat Transfer Through Laminar Boundary Layers on Semi-Infinite Cylinders of Arbitrary Cross Section, D. E. Bourne and S. Wardle 460
Heat Transfer to Laminar Flat-Duct Slip Flow With Internal Heat Generation, Robert M. Inman* 1266
Heat Transfer to Slender Cones in Hypersonic Air Flow, Including Effects of Yaw and Nose Bluntness, Charles E. Wittliff and Merle R. Wilson 761
Helium Injection Into the Boundary Layer at an Axisymmetric Stagnation Point, Herbert Fox 921
Lagrangian Thermodynamics of Heat Transfer in Systems Including Fluid Motion, M. A. Biot 568
On Inflexion Points in Natural-Convection Profiles, B. Gebhart* 485

Laminar Heat-Transfer Distribution on Oblate Ellipsoidal Noses in Hypersonic Flow, Marcel Vinokur* 113
Laminar, Transitional, and Turbulent Heat Transfer to a Cone-Cylinder-Flare Body at Mach 8.0, Victor Zakkay and Clifton J. Callahan 1403
Local Heat Transfer to a Yawed, Infinite, Circular Cylinder in Laminar, Compressible Flow, Daniel Weiss* 482
Measurements of Stagnation Point Heat Transfer at Low Reynolds Numbers, Antonio Ferri and Victor Zakkay ... 847
A Modification of the Busemann Ellipse for a Reacting Gas, Alan J. Chapman, Herbert Beckman, and J. R. Baker* 1010
A Note on Transitional Heat Transfer Under Hypersonic Conditions, Constantino Economos and Paul A. Libby* 101
On a Particular Class of Similar Solutions of the Equations of Motion and Energy of a Viscous Fluid, Barry L. Reeves and Charles J. Kippenhan 38
On Blunt-Body Heat Transfer at Hypersonic Speed and Low Reynolds Numbers, Antonio Ferri, Victor Zakkay, and Lu Ting* 882
On the Coupling Between Heat and Mass Transfer, O. E. Tewfik and C. J. Shirtliffe* 1009
On the Effectiveness Concept in Mass-Transfer Cooling, O. E. Tewfik* 1382
On Hypersonic Viscous Flow Over an Insulated Flat Plate With Surface Mass Transfer, C. L. Tien 1024
On the Inconsistency in Definition of the Effective Heat of Ablation, Wiktor Jaworski* 348
On the Stability of Liquid Layers Spread Over Simple Curved Bodies, Max Anliker and R. M. Beam 1196
Real-Gas Laminar-Boundary-Layer Skin Friction and Heat Transfer, R. E. Wilson 640
Small-Slip Solutions of the Viscous-Flow Equations, J. A. Laurmann* 360
Some Effects of Injection of Foreign Gases in a Decelerating Laminar Boundary Layer in Supersonic Flow, S. William Gouse, Jr., George A. Brown, and Joseph Kaye 1250
Stagnation-Point Heat Transfer in Partially Ionized Air, R. C. Rozycki and S. J. Fenster* 1490
Stagnation Point Viscous Hypersonic Flow, F. J. Stoddard* 1138
Summary of a Study of the Use of Reference States in Predicting Mass-, Momentum-, and Energy-Transfer Rates in Laminar Flows, Eldon L. Knuth* 1131
Supersonic Flow at the Surface of a Circular Cone at Angle of Attack, J. W. Willett (Vol. 27, pp. 907–912, 920)
Comment, B. A. Woods* 481
Author's Reply* 482
Temperature Distribution in a Spinning Sphere During Atmospheric Entry, Herbert Reismann 151
Thermal Effects on a Transpiration Cooled Hemisphere, Albert F. Gollnick, Jr. 583
Turbulent Diffusion in the Wake of a Blunt-Nosed Body at Hypersonic Speeds, Lester Lees and Leslie Hromas ... 976
Variational Analysis of Ablation, M. A. Biot and H. Daughaday* 227
Variational and Lagrangian Thermodynamics of Thermal Convection—Fundamental Short-Comings of the Heat-Transfer Coefficient, M. A. Biot* 105
Viscous and Inviscid Nonequilibrium Gas Flows, Robert J. Whalen 1222

COMPUTERS—ANALOGIES

Simulation of Jackknifing Moments, R. M. Talbott* 606

CONTROL

Dynamic Elastic-Plastic Behavior of Beams and Lifting Surfaces, Joshua E. Greenspon 633
Four-Gimbal Platform Behavior Near 90° Pitch, B. Wallach and A. Merz* 479
Passive Damping of Wobbling Satellites: General Stability Theory and Example, W. R. Haseltine 543
A Similarity Between Feedback Control Systems and Elastic Wave-Propagation System, Chintsun Hwang* 107
A Simplified Method to Identify and Cure Roll Coupling, J. Roskam* 608

FLIGHT DYNAMICS AND PERFORMANCE

An Analysis of the Avoidance of Collision Between Aircraft on Curvilinear Flight Trajectories, Paul A. Crafton 11
A Closed-Form Solution for the Oscillations of a Vehicle Entering a Planetary Atmosphere, Arthur L. Greensite* 745
The Construction of Stability and Frequency-Response Diagrams Using Vectors, Donald McCloy* 880
A Feedback-Theory Analysis of Airframe Cross-Coupling Dynamics, Duane T. McRuer 525
Linearized Dynamics of a Nuclear Ramjet Missile, Howard G. Rodean 29
Pitch-Yaw Stability of a Missile Oscillating in Roll via the Second Method of Lyapunov, P. C. Parks* 874
Correction* 1485
Power-Spectral Analysis of a Reconnaissance Vehicle, Herbert L. Rothman* 1387
Transformation of Coordinate Axis Systems of Aircraft, H. L. Rothman and M. Pittel (Vol. 28, pp. 583–584)*
Comment, Eugene C. Knox* 604
Wing-Tail Interference as a Cause of "Magnus" Effects on a Finned Missile, Edward R. Benton 1358
Performance of Optimized Multistage Rockets, Ralph S. Cooper 1339
Unsteady Frequency Response Functions for Use in Power Spectral Analysis, Max Chernoff and Herbert L. Rothman 121

GROUND-EFFECT MACHINES

Aerodynamic Processes in the Downwash-Impingement Problem, Robert J. Vidal 1067
Cruise Performance of Channel-Flow Ground-Effect Machines, T. Strand, W. W. Royce, and T. Fujita 702
Inviscid-Incompressible-Flow Theory of Static Two-Dimensional Solid Jets in Proximity to the Ground, T. Strand 170
A Note on Havelock's Shallow-Water Wave-Resistance Curves, H. E. Brandmaier and F. J. Moretti* 357

GUIDANCE

Change of Satellite Orbit Plane by Aerodynamic Maneuvering, Howard S. London 323
Elementary Derivation of General Equations for Terrestrial Inertial Navigation, Oscar T. Schultz 1324
Four-Gimbal Platform Behavior Near 90° Pitch, B. Wallach and A. Merz* 479
Guidance-Error Analysis of Satellite Trajectories, Harold S. Braham and Lionel J. Skidmore 1091

Maneuvering Technique for Changing the Plane of Circular Orbits With Minimum Fuel Expenditure, David C. Weiss* ... 368
Response of a Schuler-Tuned Inertial Guidance System to Random Errors, James T. Ephgrave* ... 233

LANDING GEAR

Mathematical Analysis of Corotating Nose-Gear Shimmy Phenomenon, Ronald W. Beery and Vee C. Tsien ... 1462

MAGNETOHYDRODYNAMICS, PLASMA

Acceleration of Plasmas by Continuous Linear Lorentz Forces, Sterge T. Demetriades and Richard W. Ziemer* ... 603
Application of Hollow Cathodes to Hypersonic Research, J. T. Yen* ... 496
An Approximate Solution for Laminar Channel Flow of a Conducting Fluid under Transverse Magnetic Field, Fujihiko Sakao* ... 246
Axisymmetric Magnetohydrodynamic Channel Flow, F. D. Hains and Y. A. Yoler ... 143
Bremsstrahlung Effects on Specific Impulse in Electrothermal Propulsion Devices, H. A. Hassan* ... 1005
Constant-Electric-Field and Constant-Magnetic-Field Magnetogasdynamic Channel Flow, Gordon C. Oates* ... 231
The Constant-Velocity MHD Generator With Variable Electrical Conductivity, Eric F. Brocher* ... 626
The Electromagnetic Body Force in Magnetohydrodynamics, W. F. Hughes* ... 347
An Experimental Method for Measuring the Electrical Conductivity of High-Temperature Gases, G. F. Anderson and P. F. Maeder* ... 1263
Free-Convection Magnetohydrodynamic Flow Past a Porous Flat Plate, Pau-Chang Lu (Vol. 28, p. 346-347)* Erratum* ... 109
Gasdynamic Effects on Electric Current Density in Magnetogasdynamics, S. I. Pai* ... 483
A Generalized Porous-Wall "Couette Type" Flow With Uniform Suction or Blowing and Uniform Transverse Magnetic Field, P. Ramamoorthy* ... 111
The Interaction of Tungsten Arcs With Flowing Air, James H. Kelley and Allen E. Fuhs* ... 488
Joule Heating in Magnetohydrodynamic Free-Convection Flows, Kenneth R. Cramer* ... 746
Laminar Jet Mixing of an Electrically Conducting Fluid in the Presence of a Magnetic Field, N. Riley* ... 624
A Magnetofluid-Dynamic Kutta-Joukowsky Condition, E. Cumberbatch, L. Sarason, and H. Weitzner* ... 244
Magnetohydrodynamic Flow Past a Semi-Infinite Plate, D. Meksyn ... 662
Magnetohydrodynamic Mach Cones, E. Cumberbatch ... 1476
Normal-Shock Relations in Magnetohydrodynamics, Roy M. Gundersen* ... 997
A Note on Hydromagnetic Simple-Wave Flow, Roy M. Gundersen* ... 886
A Note on One-Dimensional Hydromagnetic Flow With Transverse Magnetic Field, Roy M. Gundersen* ... 363
On the Flow of a Hydromagnetic Fluid Between Two Oscillating Flat Plates, M. M. Stanišić, B. H. Fetz, H. P. Mickelsen, Jr., and F. M. Czumak* ... 116
On the Hodograph Method in Magnetogasdynamics, Milomir M. Stanišić* ... 242
On the Magnetic Field in MGD Channel Flow, Robert R. Berlot* ... 612
On Shearing Flow Between Porous Coaxial Cylinders, N. T. Dunwoody* ... 494
Similar Solutions in Magnetohydrodynamics, John Fillo* ... 1481
One-Dimensional Hydromagnetic Flow With Small Area Variations, Roy M. Gundersen* ... 474
The Propagation of a Nonuniform Magnetohydrodynamic Shock Wave Into a Moving Monatomic Fluid, Roy M. Gundersen ... 1421
Similar Solutions of the Energy Equation in Magnetohydrodynamics, R. J. Gribben* ... 469
Some Explicit Solutions for Constant-Temperature Magnetogasdynamic Channel Flow, Robert R. Berlot* ... 748
Steady Flow of Conducting Fluids in Channels Under Transverse Magnetic Fields, With Consideration of Hall Effect, Itiro Tani ... 297

MATHEMATICS

Use of Special Coordinates to Simplify Matric Structural Analysis, Bertram Klein* ... 1127
An Application of Macauley's Brackets in the Integration of Some Discontinuous Expressions Arising in Beam Theory, Leon Y. Bahar* ... 605
Expansion of an $n \times n$ Characteristic Stability Determinant, Robert L. Swain* ... 630
An Extension of Macauley's Brackets to Green's Functions Arising in Beam Theory, Leon Y. Bahar* ... 1130
Improvement of Gauss-Seidel Iteration of Simultaneous Equations, Frederick L. Ryder* ... 1386
A Note on Two-Point Taylor's Series for Solving Ordinary Differential Equations, M. Fine (Vol. 28, p. 671)* Comment, William Squire* ... 353 Author's Reply* ... 354
On Accelerating Convergence in the Iteration of Complex Matrices, William P. Rodden and Edith F. Farkas* ... 1143
On Inverting Large Matrices by Partitioning and Crout's Method, William P. Rodden* ... 1270

ORBITS AND TRAJECTORIES

An Analysis of the Avoidance of Collision Between Aircraft on Curvilinear Flight Trajectories, Paul A. Crafton ... 11
Application of Inequality Constraints to Variational Problems of Lifting Re-Entry, Ely S. Levinsky ... 400
Change of Satellite Orbit Plane by Aerodynamic Maneuvering, Howard S. London ... 323
Determination of Orbit in Two-Body System, M. A. Rahman* ... 1393
Differential Expressions for Nearly Rectilinear and Rectilinear Closed Orbits, Li Shu Wen ... 1102
On Exact Numerical and Approximate Analytical Solution for Ballistic Re-Entry at Nearly Zero-Degree Angle of Inclination, W. H. T. Loh* ... 495
Guidance-Error Analysis of Satellite Trajectories, Harold S. Braham and Lionel J. Skidmore ... 1091
The Importance of Independent Estimators in Predicting Orbital Elements, Albert Arcese* ... 1001
Inequality Constraints in Steepest-Descent Trajectory Optimization, Andrew H. Jazwinski* ... 1268
Invariant Two-Body Velocity Components, James L. Cronin, Jr., and Robert E. Schwartz* ... 1384
Maneuvering Technique for Changing the Plane of Circular Orbits With Minimum Fuel Expenditure, David C. Weiss* ... 368
Note on Some Optimum Rocket Trajectories, G. Leitmann* ... 1264

Satellite Lifetimes in Elliptic Orbits, J. Kork 1273
A Second-Order Theory of Entry Mechanics Into a Planetary Atmosphere, W. H. T. Loh 1210
Solution in Quadratures for the Trajectory of a Rocket in a Gravity Turn, Valdemars Punga and R. G. Campbell* .. 1125
Special Solutions to the Equations of Motion for Maneuvering Entry, W. Scott Jackson* 236
A Unified Treatment of "Variation of Parameters" and "Differential Expressions" Methods in Trajectory Prediction and Error Analysis, Li Shu Wen 61

POWER PLANTS

Bremsstrahlung Effects on Specific Impulse in Electrothermal Propulsion Devices, H. A. Hassan* 1005
Effect of Porosity on the Two-Dimensional Supersonic Sail, E. A. Boyd* 232
Force-Balance Determination of Supersonic/Hypersonic Combustion-Inlet Performance Leveis, Paul H. Kutschenreuter, Jr.* 1389
Linearized Dynamics of a Nuclear Ramjet Missile, Howard C. Rodean 29
Propeller-Nacelle Whirl Flutter, John C. Houbolt and Wilmer H. Reed, III 333
Real-Gas Effects on Oblique-Shock Detachment Angles, C. W. Hartsell and W. J. Hays* 116
Theoretical Solution of a Transient, Fluid-Cooled Heat Generator, James R. Hume and Victor J. Skoglund 1156

SAFETY

An Analysis of the Avoidance of Collision Between Aircraft on Curvilinear Flight Trajectories, Paul A. Crafton 11
Another Historical Note on the 1.5 Factor of Safety, Albert Epstein* 759
Historical Note on the 1.5 Factor of Safety for Aircraft Structures, F. R. Shanley* 243

SOLID PROPELLANTS

Neutral Burning Using an Interrupted-Tube Type of Solid Propellant Grain Geometry, H. Greer* 758
Thermal Bond Stresses in Case-Bonded Viscoelastic Propellant Discs, Bernard W. Shaffer and Myron Levitsky . 827

SPACECRAFT, MISSILES

Analysis and Synthesis of a Particular Class of Satellite Attitude-Control Systems—Part I. System-Analysis Results, Cornelius T. Leondes, Robert E. Roberson, and Masanao Aoki 1433
Analysis and Synthesis of a Particular Class of Satellite Attitude-Control Systems—Part II, Synthesis Results, Cornelius T. Leondes and Robert E. Roberson 1443
Approximate Methods for One-Dimensional Heat-Flow Analysis, L. D. Wing 689
Change of Satellite Orbit Plane by Aerodynamic Maneuvering, Howard S. London 323
A Closed-Form Solution for the Oscillations of a Vehicle Entering a Planetary Atmosphere, Arthur L. Greensite* 745
Comparison of Static Pressures on Flared Bases in Nonuniform Hypersonic Flow as Calculated by Exact and Approximate Methods, Martin R. Fink* 1012
Derivation of Angular Velocity Ratio for a Particular Despin System, H. J. Curfman, Jr., T. B. McKee, and J. W. Youngblood (Vol. 28, pp. 822-823)*
Comment, Adolf A. Perlmutter* 879
Author's Reply, Howard J. Curfman* 879
Dissipation of Nitrogen Gas Ejected From Orienting Mechanism of Orbiting Satellites, Roy G. Brereton and Francis J. Cheselske* 114
Dynamic Stability of Aerodynamically Responsive Satellites, D. M. Schrello 1145
Earth-Emitted Infrared Radiation Incident Upon a Satellite, Dieter Goetze and Charles B. Grosch 521
The Effect of Drag Change on the Burnout Velocity of a Rocket, Raymond F. Anderson* 614
An Equivalence Principle for Water-Exit and -Entry Problems, John P. Moran (Vol. 27, pp. 876-877)*
Erratum* 1007
The Flow About a Moving Body in the Upper Ionosphere, G. A. Bird 808
Guidance-Error Analysis of Satellite Trajectories, Harold S. Braham and Lionel J. Skidmore 1091
Linearized Dynamics of a Nuclear Ramjet Missile, Howard C. Rodean 29
Maneuvering Technique for Changing the Plane of Circular Orbits With Minimum Fuel Expenditure, David C. Weiss 368
Note on a Class of Variational Problems In Rocket Flight, G. Leitmann* 1000
Note on Some Optimum Rocket Trajectories, G. Leitmann* 1264
On the Inviscid Tail Efficiencies of Slender Configurations at Hypersonic Speeds, Charles P. Hoult* 748
Passive Damping of Wobbling Satellites: General Stability Theory and Example, W. R. Haseltine 543
Performance of Optimized Multistage Rockets, Ralph S. Cooper 1339
Perturbations of a Synchronous Satellite Due to Triaxiality of the Earth, R. H. Frick and T. B. Garber 1005
Pitch-Yaw Stability of a Missile Oscillating in Roll via the Second Method of Lyapunov, P. C. Parks* 874
Correction* 1485
The Qualitative Dynamics of Atmospheric Entry and Re-Entry, John D. Crisp (Vol. 28, pp. 830-831)*
Erratum* 751
Radiating Effectiveness of Annular-Finned Space Radiators, Including Mutual Irradiation Between Radiator Elements, E. N. Sparrow, G. B. Miller, and V. K. Jonsson 1291
Satellite Lifetimes in Elliptic Orbits, J. Kork 1273
Shock Waves in Solid Craters, Norman Davids and Y. K. Huang 550
Simulation of Jackknifing Moments, R. M. Talbott* 606
Solution in Quadratures for the Trajectory of a Rocket in a Gravity Turn, Valdemars Punga and R. G. Campbell* .. 1125
Thermal Bond Stresses in Case-Bonded Viscoelastic Propellant Discs, Bernard W. Shaffer and Myron Levitsky .. 827
Wing-Tail Interference as a Cause of "Magnus" Effects on a Finned Missile, Edward R. Benton 1358

Re-Entry

Application of Inequality Constraints to Variational Problems of Lifting Re-Entry, Ely S. Levinsky 400
On Atmospheric Entry With Small L/D, W. H. T. Loh* ... 1016
A Closed-Form Solution for the Oscillations of a Vehicle Entering a Planetary Atmosphere, Arthur L. Greensite* 745
Comment on Lateral Range During Equilibrium Glide, Howard S. London* 610

Determination of Lift or Drag Programs to Minimize Re-Entry Heating, Arthur E. Bryson, Walter F. Denham, Frank J. Carroll, and Kinya Mikami 420
Experimental Lift and Drag of a Series of Glide Configurations at Mach Numbers 12.6 and 17.5, Richard E. Geiger 410
On Exact Numerical and Approximate Analytical Solution for Ballistic Re-Entry at Nearly Zero-Degree Angle of Inclination, W. H. T. Loh* 495
Optimizing the Aft Configuration of a Passive-Entry Capsule, P. Jaffe* 1388
The Qualitative Dynamics of Atmospheric Entry and Re-Entry, John D. Crisp (Vol. 28, pp. 830-831)*
Erratum* 751
A Second-Order Theory of Entry Mechanics Into a Planetary Atmosphere, W. H. T. Loh 1210
Special Solutions to the Equations of Motion for Maneuvering Entry, W. Scott Jackson* 236
Temperature Distribution in a Spinning Sphere During Atmospheric Entry, Herbert Reismann 151
Comment, Richard L. Schapker* 999
Author's Reply* 1385
The Wave Behind an Oscillating Vehicle, Seymour L. Zeiberg 1344

STRUCTURES

Analysis of Low-Aspect-Ratio Aircraft Structures, Charles H. Samson, Jr., and Heinrich W. Bergmann (Vol. 27, pp. 679-693, 711)
Some Comments, B. Klein (Vol. 28, p. 432)*
Further Comments, Charles H. Samson, Jr.* 373
Reply, B. Klein* 1394
Analysis of Simply Supported Elastic Beam Columns With Large Deflections, Harvey DeVon Christensen 1112
Another Historical Note on the 1.5 Factor of Safety, Albert Epstein* 759
An Application of Macauley's Brackets in the Integration of Some Discontinuous Expressions Arising in Beam Theory, Leon Y. Bahar* 605
Application of a New Matrix Method to Vibration Analysis of Structures, Bertram Klein* 350
Asymptotic Solution of Nonshallow Shells of Revolution Subjected to Nonsymmetric Loads, Richard D. Schile 1375
Axisymmetric Large Deflections of Circular Plates Subjected to Thermal and Mechanical Loads, Malcolm Newman and Marvin Forray 1060
The Basic Redundant System in the Analysis of Complex Structures, Fernando Venancio Filho* 1006
The Buckling Mode of a Tension Bar After the Load is Released, A. J. Gazda* 487
Comment, N. J. Huffington, Jr.* 1128
Buckling of Core-Stabilized Cylinders Under Axisymmetric External Loads, Don O. Brush and Bo O. Almroth 1164
Buckling of Sandwich Cylinders Under Axial Load, Richard J. Sylvester 863
Buckling of Sandwich Sphere Under Normal Pressure, John C. Yao 264
The Bending Strength of Pressurized Cylinders, George W. Zender* 362
Breathing Vibrations of a Circular Cylindrical Shell With an Internal Liquid, Ulric S. Lindholm, Daniel D. Kana, and H. Norman Abramson 1052
Calculations for the Stability of Thin Conical Frustums Subjected to External Uniform Hydrostatic Pressure and Axial Load, Paul Seide 951
Characteristic Times of Nonhomogeneous Maxwell Materials, O. W. Dillon 1081
Clamped Short Oval Cylindrical Shells Under Hydrostatic Pressure, William P. Vafakos, Frank Romano, and Joseph Kempner 1347
Classical Columns and Creep, George Gerard and Ralph Papirno* 680
Comparison of Theoretical and Experimental Creep-Buckling Times of Initially Straight, Centrally Loaded Columns, W. E. Jahsman and F. A. Field 431
Complete Stress Function for Nonhomogeneous, Anisotropic, Plane Problems in Continuum Mechanics, Charles W. Bert* 756
Compressive Stability of Orthotropic Cylinders, George Gerard 1171
Conceptual Methods in the Theory of Thin, Elastic Shells, Hyman Serbin* 1271
Concerning the Method of Representing Concentrated Surface Forces, H. H. Pan* 106
Damping of Flexural Vibrations of Sandwich Plates, Yi-Yuan Yu 790
Deflection of Initially Curved (Circular Bars), Robert Frisch-Fay* 875
Deflections and Stresses of a Clamped Rectangular Sandwich Beam, T. C. Fang, M. J. Forray, and R. L. Benedicto 1368
Design of Minimal-Weight Structures for Given Reliability and Cost, Robert Kalaba* 355
A Design Study of Tubes That Are Loaded Circumferentially by Harmonically Varying Pressures, W. Stuiver* 1008
A Digital Method for Redundant Structural Analysis, R. F. O'Connell 1414
Direct Beam Stiffness-Matrix Calculations Including Shear Effects, Claus J. Meissner* 247
Direct Electrical Analog for Plastic States of Stress, Nobuo Inoue* 1130
Dynamic Elastic-Plastic Behavior of Beams and Lifting Surfaces, Joshua E. Greenspon 633
The Effect of Asymmetric Deformations on the Buckling of Shallow Spherical Shells, Hubertus J. Weinitschke* 1141
The Effect of Thickness-Stretch Deformation on Extensional Vibrations of Sandwich Plates, Yi-Yuan Yu* 491
The Effective Plate Width of Longitudinally Stiffened Plates at Plastic Buckling, H. L. Sujata 269
Effects of Internal Pressure on the Buckling of Circular-Cylindrical Shells Under Bending, V. I. Weingarten 804
Elastic Stability of Orthotropic Shells, Herbert Becker and George Gerard 505
The Elasticity Solution of a Long Circular-Cylindrical Shell Subjected to a Uniform, Circumferential, Radial Line Load, Jerome M. Klosner 834
Experimental Stress Analysis in Three Dimensions, A. A. Sherwood* 112
An Extension of Macauley's Brackets to Green's Functions Arising in Beam Theory, Leon Y. Bahar* 1130
The Finite Deflection of a Normally Loaded, Spinning, Elastic Membrane, James G. Simmonds 1180
Forced Vibrations of Cylindrical Sandwich Shells, M. P. Bieniek and A. M. Freudenthal 180
Free Vibration of a Damped Elliptical Plate, R. P. McNitt* 1124
General Formulas for Influence Coefficients of Thin Spherical Shells, Nicholas J. Hoff 174
Historical Note on the 1.5 Factor of Safety for Aircraft Structures, F. R. Shanley* 243
Inelastic Buckling of Initially Imperfect Cylindrical Shells Subject to Axial Compression, Lawrence H. N. Lee 87
Inelastic Redundant Analysis and Test-Data Comparison for a Heated Ring Frame, B. E. Gatewood and R. W. Gehring* 364
Influence of Large Amplitudes on Flexural Vibrations of a Thin, Cylindrical, Sandwich Shell, Hugh N. Chu* 376

Influence of Transverse Shear on Nonlinear Vibrations of Sandwich Beams With Honeycomb Cores, Hu-Nan Chu (Vol. 28, pp. 405-410)
Comment, Yi-Yuan Yu* ... 886
Author's Reply ... 887
Matrix Methods of Structural Analysis, Robert Melosh* ... 365
Comment, B. Klein* ... 1394
Author's Reply* ... 1395
New Evidence Concerning the Origin of Fatigue Cracks as a Surface Phenomenon, F. R. Shanley* ... 1135
A Note on Discontinuity Stresses in Cylindrical Shells, E. G. Menkes* ... 619
A Note on Free Vibrations of Triangular and Sector Plates, R. A. Westmann* ... 1139
On Simplification of the Strain-Energy Formula, Shin-ichi Suzuki* ... 369
On the Aeroelastic Stability of Orthotropic Panels in Supersonic Flow, Adolf Abraham Perlmutter* ... 1332
On the Crack-Tip Stress-Intensity Factors for Cylindrical Bars Under Torsion, G. C. Sih* ... 1265
On the Empirical Modification Proposed by Kuhn for a Box Beam Subjected to Torsion, Shin-ichi Suzuki* ... 629
On the Free Vibration of Thin Clamped Cylindrical Shells Subject to Radial Pressure, L. R. Koval* ... 615
On the Instability of Circular Plates, Arnold D. Kerr* ... 486
On the Nonlinear Elastokinetics of Shells and Beams, A. Libai ... 1190
On the Nonlinear Strain-Curvature Displacement Relationships for Thin Elastic Shells, A. W. Leissa* ... 1381
On the Response Spectrum of Low-Frequency Mass-Spring Systems Subjected to Ground Shock, Y. C. Fung* ... 100
On the Role of Bending in the Dynamic Response of Thin Shells to Moving Discontinuous Loads, P. Mann-Nachbar ... 648
On the Role of Initial Imperfections in Plastic Buckling of Cylinders Under Axial Compression, George Gerard* ... 744
On the Shear Stiffness of Fabrics, R. W. Leonard (Vol. 29, pp. 349-350)*
Comment, A. D. Topping* ... 757
Author's Reply* ... 757
On the Stress Measurement of Sweptback Wing Structures by Resin Model, Shin-ichi Suzuki* ... 117
On the Theory of Laminated Anisotropic Shells and Plates, S. B. Dong, K. S. Pister, and R. L. Taylor ... 969
Plastic Behavior of Beam-Type Structures, Joshua E. Greenspon* ... 1261
Plastic Stability Theory of Geometrically Orthotropic Plates and Cylindrical Shells, George Gerard ... 956
Optimal Proportions of Pressure Vessel Heads, George A. Hoffman ... 1471
A Remark on Transient Stresses in Nonhomogeneous Viscoelastic Materials, J. L. Sackman* ... 1015
A Simple Method of Matric Structural Analysis, Part VI—Bending of Plates of Arbitrary Shape and Thickness Under Arbitrary Normal Loading, Bertram Klein ... 306
Slanted Drop Cords in Inflatable Airmat Beams, Harvey G. McComb, Jr., and Robert W. Leonard* ... 476
Some Notes on the Optimum Design of Box Beams for Combined Strength and Stiffness, B. Saelman* ... 498
The Stability Under Axial Compression and Lateral Pressure of Circular-Cylindrical Shells With a Soft Elastic Core, Paul Seide ... 851
The Steady Creep of Long Pressurized Cylinders, Anthony E. Gemma* ... 352
A Stiffness Matrix for the Analysis of Thin Plates in Bending, Robert J. Melosh (Vol. 28, pp. 34-42, 64)
Comment, David Williams* ... 102
Author's Reply* ... 103
Stresses and Deformations of the Thin-Walled Pressurized Torus, Peter F. Jordan ... 213
Comment, Aleksander Kornecki* ... 1000
Author's Reply* ... 1000
Stresses in Continuous Skin-Stiffener Panels Under Random Loading, Y. K. Lin ... 67
The Stresses in a Transversely Isotropic Rotating Circular Plate With Rigid Core, Dipti Deb* ... 1003
A Study of Creep Collapse of a Long Circular Cylindrical Shell Under Various Distributed Force Systems, Joseph C. Serpico ... 1316
A Study of the Cantilevered Square Plate Subjected to a Uniform Loading, A. W. Leissa and F. W. Niedenfuhr ... 162
Theorems for Change of Volume and Moments of Volume of Elastic Tanks Subject to Arbitrary Internal Pressures, John R. Spreiter* ... 1140
A Theoretical Interaction Equation for the Buckling of Circular Shells Under Axial Compression and External Pressure, P. W. Sharman* ... 878
Theory of Creep Buckling of Perfect Plates and Shells, George Gerard ... 1087
Thermal Stresses in the Bending of Ogival Shells, C. N. De Silva ... 207
Thermal Stresses and Deflections in Thin Plates With Temperature-Dependent Elastic Moduli, Malcolm Newman and Marvin Forray* ... 372
Torsion Analysis of Multicell Tubes, F. W. Niedenfuhr (Vol. 27, pp. 308-309)*
Comment, Y. K. Lin* ... 475
Transient Stresses in Nonhomogeneous Viscoelastic (Maxwell) Materials, O. W. Dillon ... 284
The Transverse Vibrations of a Flat Spinning Membrane, James G. Simmonds ... 16
A Unified Theory for Creep Buckling Under Normal Loads, E. Z. Stowell and Thein Wah* ... 658
A Uniqueness Theorem for a Nonlinear Maxwell Body, Jerome L. Sackman* ... 240
Use of Special Coordinates to Simplify Matric Structural Analysis, Bertram Klein* ... 1127
Vibration of Stepped Beams, N. J. Taleb and E. W. Suppiger (Vol. 28, p. 295)*
Comment, H. H. Pan* ... 371
Authors' Reply* ... 372
Vibration Modes of a Two-Beam System by the Holzer Method, Henry E. Fettis* ... 1396
Vibrations of a Rectangular Cantilever Plate, R. W. Claassen and C. J. Thorne ... 1300
Weight of Ellipsoid of Revolution With Optimum Tapered Thickness, George S. Johnston* ... 1269

Thermal Stresses

Allowable Axial Loads and Bending Moments for Inelastic Structures Under Nonuniform Temperature Distribution, B. E. Gatewood and R. W. Gehring ... 513
Axisymmetric Large Deflections of Circular Plates Subjected to Thermal and Mechanical Loads, Malcolm Newman and Marvin Forray ... 1060
Inelastic Redundant Analysis and Test-Data Comparison for a Heated Ring Frame, B. E. Gatewood and R. W. Gehring* ... 364
The Postbuckling Analysis of Heated Rectangular Plates, Marvin Forray and Malcolm Newman* ... 1262
On the Postbuckling Behavior of Rectangular Plates, Marvin Forray and Malcolm Newman* ... 754
Similarity Laws for Aerothermoelastic Testing, John Dugundji and John M. Calligeros ... 935
Theoretical and Experimental Investigation of Thermal Stresses in Hypersonic-Aircraft Wing Structures, Herbert Tramposch ... 719
Thermal Bond-Stresses in Case-Bonded Viscoelastic Propellant Grains, Bernard W. Shaffer and Myron Levitsky 827
Thermal Bending of Rectangular Plate, Y. C. Das and D. R. Navaratna* ... 1397

Thermal Stresses and Deflections in Thin Plates With Temperature-Dependent Elastic Moduli, Malcolm Newman and Marvin Forray* 372
Thermal Stresses and Deflections in Elastically Supported Plates, Marvin Forray and Malcolm Newman* 611
Thermal Stresses in the Bending of Ogival Shells, C. N. De Silva 207

THERMODYNAMICS

Approximate Methods for One-Dimensional Heat-Flow Analysis, L. D. Wing 689
Asymptotic Eigenfunctions for Turbulent Heat Transfer in a Pipe, C. V. Sternling and C. A. Sleicher* 109
Comment, L. S. Dzung* 885
Authors' Reply* 885
Correlation Equations for Determining the Equilibrium Conditions Behind a Strong Shock, S. A. Waiter and P. Roy Choudhury* 618
Definition of Figure of Merit for Energy-Conversion Processes, Rodolfo Monti* 881
Heat Transfer in the Laminar Boundary Layer With Ablation of Vapor of Arbitrary Molecular Weight, C. R. Faulders 76
Lagrangian Thermodynamics of Heat Transfer in Systems Including Fluid Motion, M. A. Biot 568
Linear Heat Flow in a Composite Slab, Walter P. Reid 905
Neutral Burning Using an Interrupted-Tube Type of Solid Propellant Grain Geometry, H. Greer* 758
A Note on the Transient Temperature Distribution in an Orthotropic Sphere Due to Aerodynamic Heating, B. Venkatraman, Sharad A. Patel, and Frederick V. Pohle* 628
On a Distribution Function Satisfying the Local *H*-Theorem, Paul B. Hays* 753
On the Heat-Convection Energy Equation, Salamon Eskinazi* 607
On the Use of Duhamel's Equation for Heat-Conduction Problems, Richard L. Schapker* 883
One-Dimensional Heat Conduction With Arbitrary Heating Rate, S. Y. Chen (Vol. 28, pp. 336-337)*
Comment, P. D. Thomas* 616
Another Comment, I. U. Ojalvo, M. Newman, and M. Forray* 1126
Pressure Variation of Strong-Detonation Limits, K. M. Foreman* 240
Radiating Effectiveness of Annular-Finned Space Radiators, Including Mutual Irradiation Between Radiator Elements, E. M. Sparrow, G. B. Miller, and V. K. Jonsson 1291
A Reaction-Rate Parameter for Gasdynamics of a Chemically Reacting Gas Mixture, M. Lenard* 995
Temperature and Mixture Variation of Strong-Detonation Limits, K. M. Foreman* 469
Theoretical Solution of a Transient, Fluid-Cooled Heat Generator, James R. Hume and Victor J. Skoglund 1156

WIND TUNNELS AND EQUIPMENT

Test-Section Conditions Generated in the Supersonic Expansion of Real Air, J. William Reece* 617

✦ ✦ ✦

Author Index

ABRAMSON, H. NORMAN, ULRIC S. LINDHOLM, AND DANIEL D. KANA. Breathing Vibrations of a Circular Cylindrical Shell With an Internal Liquid 1052

ADAMS, ERNST W. A Graphical Approximation for Temperatures and Sublimation Rates at Surfaces Subjected to Small Net and Large Gross Heat-Transfer Rates* 360

ALMROTH, BO O., AND DON O. BRUSH. Buckling of Core-Stabilized Cylinders Under Axisymmetric External Loads 1164

AMBROSIO, ALPHONSO, AND ANDRZEJ WORTMAN. Stagnation-Point Shock-Detachment Distance for Flow Around Spheres and Cylinders in Air* 875

ANDERSON, G. F., AND P. F. MAEDER. An Experimental Method for Measuring the Electrical Conductivity of High-Temperature Gasses* 1263

ANDERSON, RAYMOND F. The Effect of Drag Change on the Burnout Velocity of a Rocket* 614

ANDES, G. M., AND J. E. MCNUTT. Capillary Phenomena in Free Fall* 103

ANLIKER, MAX, AND R. M. BEAM. On the Stability of Liquid Layers Spread Over Simple Curved Bodies 1196

AOKI, M., CORNELIUS T. LEONDES, AND R. E. ROBERSON. Analysis and Synthesis of a Particular Class of Satellite Attitude-Control System, Part I: System Analysis Results 1433

ARCESE, ALBERT. The Importance of Independent Estimators in Predicting Orbital Elements* 1001

BAHAR, LEON Y. An Application of Macauley's Brackets in the Integration of Some Discontinuous Expressions Arising in Beam Theory* 605

BAHAR, LEON Y. An Extension of Macauley's Brackets to Green's Functions Arising in Beam Theory* 1130

BAKER, J. R., ALAN J. CHAPMAN, AND HERBERT BECKMAN. A Modification of the Busemann Ellipse for a Reacting Gas* 1010

BARRY, FRANK W. On the Limiting Yaw Angle for Stone's Yawing-Cone Theory* 613

BEAM, R. M., AND MAX ANLIKER. On the Stability of Liquid Layers Spread Over Simple Curved Bodies 1196

BECKER, HERBERT, AND GEORGE GERARD. Elastic Stability of Orthotropic Shells 505

BECKMAN, HERBERT, ALAN J. CHAPMAN, AND J. R. BAKER. A Modification of the Buseman Ellipse for a Reacting Gas* 1010

BEERY, RONALD W., AND VEE C. TSIEN. Mathematical Analysis of Co-Rotating Nose Gear Shimmy Phenomenon 1462

BENEDICTO, R., T. C. FANG, AND M. J. FORRAY. Deflections and Stresses of a Clamped Rectangular Sandwich Beam 1368

BENTON, EDWARD R. Wing-Tail Interference as a Cause of Magnus Effects on a Finned Missile 1358

BERLOT, ROBERT R. On the Magnetic Field in MGD Channel Flow* 612

BERLOT, ROBERT R. Some Explicit Solutions for Constant-Temperature Magneto-Gasdynamic Channel Flow* 748

BERT, CHARLES W. Complete Stress Function for Nonhomogeneous, Anisotropic, Plane Problems in Continuum Mechanics* 756

BIENIEK, M. P., AND A. M. FREUDENTHAL. Forced Vibrations of Cylindrical Sandwich Shells 180

BIOT, M. A. Fundamentals of Boundary-Layer Heat Transfer With Streamwise Temperature Variations 558

BIOT, M. A. Lagrangian Thermodynamics of Heat Transfer in Systems Including Fluid Motion 568

BIOT, M. A., and H. DAUGHADAY. Variational Analysis of Ablation* 227

BIOT, M. A. Variational and Lagrangian Thermodynamics of Thermal Convection-Fundamental Shortcomings of the Heat-Transfer Coefficient* 105

BIRD, G. A. The Flow About a Moving Body in the Upper Ionosphere 808

BLOOM, MARTIN H. On Viscous Wakes of Yawed Infinite Cylinders and Analogous Jets* 492

BLOXSOM, D. E., AND B. V. RHODES. Experimental Effect of Bluntness and Gas Rarefaction on Drag Coefficients of Axisymmetric Shapes in Hypersonic Flows ... 1429

BLUMER, C. B., AND E. R. VAN DRIEST. Boundary-Layer Transition at Supersonic Speeds—Three Dimensional Roughness Effects (Spheres) 909

BOURNE, D. E., AND S. WARDLE. Heat Transfer Through Laminar Boundary Layers on Semi-Infinite Cylinders of Arbitrary Cross Section 460

BOYD, E. A. Effect of Porosity on the Two-Dimensional Supersonic Sail* 232

BRAHAM, HAROLD S., AND LIONEL J. SKIDMORE. Guidance-Error Analysis of Satellite Trajectories 1091

BRANDMAIER, H. E., AND F. J. MORETTI. A Note on Havelock's Shallow-Water Wave-Resistance Curves* ... 357

BRERETON, ROY G., AND FRANCIS J. CHESELSKE. Dissipation of Nitrogen Gas Ejected From Orienting Mechanism of Orbiting Satellites* 114

BRILEY, G. J., AND F. CHORLTON. Reduction of Supersonic Flow to Subsonic by Flow Around a Concave Bend* 354

BROADWELL, JAMES E., AND ANDREW G. HAMMITT. Transient Response of Fluid Systems* 877

BROCHER, ERIC F. On Similar Solutions for Strong Blast Waves and Their Application to Steady Hypersonic Flow 694

BROCHER, ERIC F. The Constant-Velocity MHD Generator With Variable Electrical Conductivity* 626

BROWN, B. N. PRIDMORE. Conditions Behind a Shock in Real-Gas Flow 484

BROWN, GEORGE A., S. WILLIAM GOUSE., JR., AND JOSEPH KAYE. Some Effects of Injection of Foreign Gasses in a Decelerating Laminar Boundary Layer in Supersonic Flow 1250

BRUSH, DON O., AND BO O. ALMROTH. Buckling of Core-Stabilized Cylinders Under Axisymmetric External Loads 1164

BRYCE, W. W., R. E. COOPER, S. I. GRAVITZ, AND W. R. LAIDLAW. Development of a Quasi-Steady Approach to Flutter and Correlation With Kernel-Function Results 445

BRYSON, ARTHUR E., WALTER F. DENHAM, FRANK J. CARROLL, AND KINYA MIKAMI. Determination of Lift or Drag Programs to Minimize Re-Entry Heating 420

BURGGRAF, O. R. The Compressibility Transformation and the Turbulent-Boundary Layer Equations 434

BURKE, ANDREW F., AND JAMES T. CURTIS. Blunt-Cone Pressure Distribution at Hypersonic Mach Numbers* .. 237

BURTON, R. A. On the Close Relationship Between Turbulent Plane-Couette, and Pressure Flows* 1004

CAHN, M. S. Solution of the Incompressible Free-Streamline Problem by Electrical Analogy* 351

CALLAHAN, CLIFTON I., AND VICTOR ZAKKAY. Laminar, Transitional and Turbulent Heat Transfer to a Cone-Cylinder-Flare Body at Mach 8.0 1403

CALLIGEROS, JOHN M., AND JOHN DUGUNDJI. Similarity Laws for Aerothermoelastic Testing 935

CAMPBELL, R. G., AND VALDEMARS PUNGA. Solution in Quadratures for the Trajectory of a Rocket in a Gravity Turn* 1125

CARROLL, FRANK J., KINYA MIKAMI, ARTHUR E. BYRSON, AND WALTER F. DENHAM. Determination of Lift or Drag Programs to Minimize Re-Entry Heating 420

CHAPMAN, ALAN J., HERBERT BECKMAN, AND J. R. BAKER. A Modification of the Busemann Ellipse for a Reacting Gas* 1010

CHENG, H. K., J. G. HALL, T. C. GOLIAN, AND A. HERTZBERG. Errata—Boundary-Layer Displacement and Leading-Edge Bluntness Effects in High-Temperature Hypersonic Flow* 355

CHERNOFF, MAX, AND HERBERT L. ROTHMAN. Unsteady Frequency Response Functions for Use in Powers Spectral Analysis 121

CHORLTON, F., AND G. J. BRILEY. Reduction of Supersonic Flow to Subsonic by Flow Around a Concave Bend* 354

CHOUDHURY, P. ROY. Shock-Standoff Distance for Spherical Bodies at High Mach Numbers* 745

CHOUDHURY, P. ROY, AND S. A. WAITER. Correlation Equations for Determining the Equilibrium Conditions Behind a Strong Shock* 618

CHRISTENSEN, HARVEY DE VON. Analysis of Simply Supported Elastic Beam Columns With Large Deflections 1112

CHU, WEN-HWA. An Aerodynamic Analysis for Flutter in Oseen-Type Viscous Flow 781

CLAASSEN, R. W., AND C. J. THORNE. Vibrations of a Rectangular Cantilever Plate 1300

CLARK, M. E., AND J. M. ROBERTSON. The Drag of Elongated Bodies Over a Wide Reynolds Number Range 842

CONTURSI, F., AND A. POZZI. Thermal Boundary Layer of a Stream Over a Flat Plate* 883

COOPER, R. E., S. I. GRAVITZ, W. R. LAIDLAW, AND W. W. BRYCE. Development of a Quasi-Steady Approach to Flutter and Correlation With Kernel-Function Results .. 445

COOPER, RALPH S. Performance of Optimized Multistage Rockets 1339

CRAFTON, PAUL A. An Analysis of the Avoidance of Collision Between Aircraft on Curvilinear Flight Trajectories 11

CRAMER, KENNETH R. Joule Heating in Magnetohydrodynamic Free-Convection Flows* 746

CRESCI, ROBERT J., AND PAUL A. LIBBY. The Downstream Influence of Mass Transfer at the Nose of a Slender Cone 815

CRIMI, PETER, AND DONALD EARL ORDWAY. Flutter Analysis of a Supersonic Ring Wings 578

CRISP, JOHN D. Erratum—The Qualitative Dynamics of Atmospheric Entry and Re-Entry* 751

CRONIN, JAMES L., JR. Invariant Two-Body Velocity Components* 1384

CROSS, ARTHUR K. The Evaluation of Response of Aeroelastic Systems to Transient and Random Turbulence by Kernel-Function Techniques* 239

CUMBERBATCH, ELLIS. A Note on Magnetohydrodynamic Mach Cones 1476

CUMBERBATCH, E., L. SARASON, AND H. WEITZNER. A Magnetofluid-Dynamic Kutta-Joukowsky Condition* .. 244

CURTIS, JAMES T., AND ANDREW F. BURKE. Blunt-Cone Pressure Distribution at Hypersonic Mach Numbers* ... 237

CZUMAK, F. M., M. M. STANIŠIĆ, B. H. FETZ, AND H. P. MICKELSEN, JR. On the Flow of a Hydromagnetic Fluid Between Two Oscillating Flat Plates* 116

DAS, A. A Lifting-Surface Theory for Jet-Flapped Wings* 498

DAS, Y. C., AND D. R. NAVARATNA. Thermal Bending of Rectangular Plate* 1397

DAUGHADAY, H., AND M. A. BIOT. Variational Analysis of Ablation* 227

DAVIDS, NORMAN, AND Y. K. HUANG. Shock Waves in Solid Craters 550

DEB, DIPTI. The Stresses in a Transversely Isotropic Rotating Circular Plate With Rigid Core* 1003

DEBLER, WALTER R., AND CHIA-SHUN YIH. Formation of Rings in a Liquid Film Attached to the Inside of a Rotating Cylinder* 364

DEMETRIADES, STERGE T., AND RICHARD W. ZIEMER. Acceleration of Plasmas by Continuous Linear Lorentz Forces* 603

DENHAM, WALTER F., FRANK J. CAROLL, KINYA MIKAMI, AND ARTHUR E. BRYSON. Determination of Lift or Drag Programs to Minimize Re-Entry Heating 420

DENNON, JACK D. On Ando's Calculation of the Boundary Layer With Suction* 1268

DE SILVA, C. N. Thermal Stresses in the Bending of Ogival Shells 207

DILLON, O. W. Characteristic Times of Nonhomogeneous Maxwell Materials 1081

DILLON, O. W. Transient Stresses in Nonhomogeneous Viscoelastic (Maxwell) Materials 284

DONG, S. B., K. S. PISTER, AND R. L. TAYLOR. On the Theory of Laminated Anistropic Shells and Plates 969

DOYLE, MICHAEL D. C. Theories of Predicting Partial-Admission Losses in Turbines* 489

DUGUNDJI, JOHN, AND JOHN M. CALLIGEROS. Similarity Laws for Aerothermoelastic Testing 935

DUNHAM, J. Comment on: "An Actuator-Disc Analysis of Inlet Distortion and Rotating Stall in Axial-Flow Turbomachines," H. Yeh (Vol. 26, p. 739)* 361

DUNLAP, ROGER. Shroud Design for Simulating Hypersonic Flow Over the Nose of a Hemisphere* 757

DUNLAP, ROGER, AND A. M. KUETHE. Effects of Cooling on Boundary Layer Transition on a Hemisphere in Simulated Hypersonic Flow 1454

DUNWOODY, N. T. On Shearing Flow Between Porous Coaxial Cylinders* 494

DZUNG, L. S. Comment on Asymptotic Eigenfunctions for Turbulent Heat Transfer in a Pipe. C. V. STERNLING, AND C. A. SLEICHER (Vol. 29, pp. 109–110)* 885

Authors' Reply 885

ECKHAUS, WIKTOR. A Theory of Transonic Aileron Buzz, Neglecting Viscous Effects 712

ECONOMOS, CONSTANTINO, AND PAUL A. LIBBY. A Note on Transitional Heat Transfer Under Hypersonic Conditions 101

EPHGRAVE, JAMES T. Response of a Schuler-Tuned Inertial Guidance System to Random Errors* 233

EPSTEIN, ALBERT. Another Historical Note on the 1.5 Factor of Safety* 759

ERICKSON, J. C. The Pitching-Moment Coefficient of a Jet-Flapped Thin Airfoil* 1489

ESCHENROEDER, ALAN Q., J. GORDON HALL, AND PAUL V. MARONNE. Blunt-Nose Inviscid Airflows With Coupled Nonequilibrium Processes 1038

ESKINAZI, SALAMON. On the Heat-Convection Energy Equations* 607

FANG, T. C., M. J. FORRAY, AND R. BENEDICTO. Deflections and Stresses of a Clamped Rectangular Sandwich Beam ... 1368
FARKAS, EDITH F., AND WILLIAM P. RODDEN. On Accelerating Convergence in the Iteration of Complex Matrices* ... 1143
FAULDERS, C. H. Comment on Vortex Flow in a Dissociating Gas* ... 1485
FAULDERS, C. R. Heat Transfer in the Laminar Boundary Layer With Ablation of Vapor of Arbitrary Molecular Weight ... 77
FENSTER, S. J., AND R. J. HEYMAN. Effect of Variable Heat of Recombination on Stagnation-Point Heat Transfer ... 1267
FENSTER, S. J., AND R. ROZYCKI. Stagnation Point Heat Transfer in Partially Ionized Air* ... 1490
FERRI, ANTONIO, AND VICTOR ZAKKAY. Measurements of Stagnation Point Heat Transfer at Low Reynolds Numbers ... 847
FERRI, ANTONIO, VICTOR ZAKKAY, AND LU TING. On Blunt-Body Heat Transfer at Hypersonic Speed and Low Reynolds Numbers* ... 882
FETTIS, HENRY E. Vibration Modes of a Two-Beam System by the Holzer Method* ... 1396
FETZ, B. H., M. M. STANIŠIĆ, H. P. MICKELSEN, JR., AND F. M. CZUMAK. On the Flow of a Hydromagnetic Fluid Between Two Oscillating Flat Plates* ... 116
FIELD, F. A., AND W. E. JAHSMAN. Comparison of Theoretical and Experimental Creep-Buckling Times of Initially Straight, Centrally Loaded Columns ... 431
FILHO, FERNANDO VENANCIO. The Basic Redundant System in the Analysis of Complex Structures* ... 1006
FILLO, JOHN. Similar Solutions in Magnetohydrodynamics* ... 1481
FINK, MARTIN R. Comparison of Static Pressures on Flared Bases in Non-Uniform Hypersonic Flow as Calculated by Exact and Approximate Methods* ... 1012
FITZGERALD, PAUL E., JR. On the Influence of Secondary Waves From the Intersection of Shocks of the Same Family* ... 755
FOREMAN, K. M. Pressure Variation of Strong-Detonation Limits* ... 240
FOREMAN, K. M. Temperature and Mixture Variation of Strong-Detonation Limits* ... 469
FORRAY, M. J., T. C. FANG, AND R. BENEDICTO. Deflections and Stresses of a Clamped Rectangular Sandwich Beam ... 1368
FORRAY, MARVIN, AND MALCOLM NEWMAN. Axisymmetric Large Deflections of Circular Plates Subjected to Thermal and Mechanical Loads ... 1060
FORRAY, MARVIN, AND MALCOLM NEWMAN. On the Postbuckling Behavior of Rectangular Plates* ... 754
FORRAY, MARVIN, AND MALCOLM NEWMAN. The Postbuckling Analysis of Heated Rectangular Plates* ... 1262
FORRAY, MARVIN, AND MALCOLM NEWMAN. Thermal Stresses and Deflections in Elastically Supported Plates* ... 611
FORRAY, M., I. U. OJALVO, AND M. NEWMAN. Another Comment on: "One-Dimensional Heat Conduction With Arbitrary Heating Rate," S. Y. CHEN (Vol. 28, p. 336)* ... 1126
FOX, HERBERT, AND PAUL A. LIBBY. Helium Injection Into the Boundary Layer at an Axisymmetric Stagnation Point ... 921
FREUDENTHAL, A. M., AND M. P. BIENIEK. Forced Vibrations of Cylindrical Sandwich Shells ... 180
FRICK, R. H., AND T. B. GARBER. Perturbations of a Synchronous Satellite Due to Triaxiality of the Earth ... 1105
FRIEDMAN, MANFRED P. Two-Dimensional and Axisymmetric Rotational Flows Past a Transonic Corner* ... 503
FRISCH-FAY, ROBERT. Deflection of Initially Curved (Circular Bars)* ... 875
FUHS, ALLEN E., AND JAMES H. KELLEY. The Interaction of Tungsten Arcs With Flowing Air* ... 488
FUJITA, T., T. STRAND, AND W. W. ROYCE. Cruise Performance of Channel-Flow Ground-Effect Machines ... 702
FUNG, Y. C. On the Response Spectrum of Low-Frequency Mass-Spring Systems Subjected to Ground Shock* ... 100

GARBER, T. B., AND R. H. FRICK. Perturbations of a Synchronous Satellite Due to Triaxiality of the Earth ... 1105
GATEWOOD, B. E., AND G. W. GEHRING. Allowable Axial Loads and Bending Moments for Inelastic Structures Under Nonuniform Temperature Distribution ... 513
GATEWOOD, B. E., AND R. W. GEHRING. Inelastic Redundant Analysis and Test-Data Comparison for a Heated Ring Frame* ... 364
GAZDA, ALVIN J. The Buckling Mode of a Tension Bar After the Load is Released* ... 487
GEBHART, B. On Inflexion Points in Natural-Convection Profiles* ... 485
GEHRING, R. W., AND B. E. GATEWOOD. Allowable Axial Loads and Bending Moments for Inelastic Structures Under Nonuniform Temperature Distribution ... 513
GEHRING, R. W., AND B. E. GATEWOOD. Inelastic Redundant Analysis and Test-Data Comparison for a Heated Ring Frame* ... 364
GEIGER, RICHARD E. Experimental Lift and Drag of a Series of Glide Configurations at Mach Numbers 12.6 and 17.5 ... 410
GELLATLY, RONALD A. On a Soap-Film Paradox* ... 1487
GEMMA, ANTHONY E. The Steady Creep of Long Pressurized Cylinders* ... 352
GERARD, GEORGE. Compressive Stability of Orthotropic Cylinders ... 1171
GERARD, GEORGE. On the Role of Initial Imperfections in Plastic Buckling of Cylinders Under Axial Compression* ... 774
GERARD, GEORGE. Plastic Stability Theory of Geometrically Orthotropic Plates and Cylindrical Shells ... 956
GERARD, GEORGE. Theory of Creep Buckling of Perfect Plates and Shells ... 1087
GERARD, GEORGE, AND HERBERT BECKER. Elastic Stability of Orthotropic Shells ... 505
GERARD, GEORGE, AND RALPH PAPIRNO. Classical Columns and Creep ... 680
GIAMMO, THOMAS P. Comments on: "A Method of Four-Point Interpolation Especially Adapted for Treating End Conditions of Wings and Other Elastic Surfaces," J. A. Griffin (Vol. 28, pp. 161–162)* ... 490
GINZEL, INGEBORG. Two Remarks on Cones at Angle of Attack in High Supersonic Flow* ... 497
GLAUERT, M. B. The Pressure Gradient Induced by Shear Flow Past a Flat Plate ... 540
GLICK, HERBERT S. Modified Crocco-Lees Mixing Theory for Supersonic, Separated, and Reattaching Flows ... 1238
GOETZE, DIETER, AND CHARLES B. GROSCH. Earth-Emitted Infrared Radiation Incident Upon a Satellite ... 521
GOLDSTEIN, ARTHUR W. Energy-Equation Approximations in Fluid Mechanics* ... 358
GOLIAN, T. C., A. HERTZBERG, H. K. CHENG, AND J. G. HALL. Errata—Boundary-Layer Displacement and Leading-Edge Bluntness Effects in High-Temperature Hypersonic Flow* ... 355
GOLLNICK, ALBERT F., JR. Thermal Effects on a Transpiration Cooled Hemisphere ... 583
GOUSE, S. WILLIAM, JR., GEORGE A. BROWN, AND JOSEPH KAYE. Some Effects of Injection of Foreign Gasses in a Decelerating Laminar Boundary Layer in Supersonic Flow ... 1250

GRAVITZ, S. I., W. R. LAIDLAW, W. W. BRYCE, AND R. E. COOPER. Development of a Quasi-Steady Approach to Flutter and Correlation With Kernel-Function Results ... 445
GREENBERG, ROBERT A. A Correlation of Nose-Bluntness-Induced Pressures on Cylindridal and Conical Afterbodies at Hypersonic Speeds* ... 359
GREENBERG, ROBERT A. Nonequilibrium Vortex Flow in a Dissociating Gas* ... 1484
GREENSITE, ARTHUR L. Analysis of Liquid-Propellant Mode Stability of a Multitank Ballistic Booster Vehicle ... 130
GREENSITE, ARTHUR L. A Closed-Form Solution for the Oscillations of a Vehicle Entering a Planetary Atmosphere* ... 745
GREENSPON, JOSHUA E. Dynamic Elastic-Plastic Behavior of Beams and Lifting Surfaces ... 633
GREENSPON, JOSHUA E. Plastic Behavior of Beam-Type Structures ... 1261
GREER, H. Neutral Burning Using an Interrupted-Tube Type of Solid Propellant Grain Geometry* ... 758
GRIBBEN, R. J. Similar Solutions of the Energy Equation in Magnetohydrodynamics* ... 469
GROSCH, CHARLES B., AND DIETER GOETZE. Earth-Emitted Infrared Radiation Incident Upon a Satellite ... 521
GUNDERSEN, ROY M. Normal-Shock Relations in Magnetohydrodynamics* ... 997
GUNDERSEN, ROY M. A Note on Hydromagnetic Simple-Wave Flow* ... 886
GUNDERSEN, ROY M. A Note on One-Dimensional Hydromagnetic Flow With Transverse Magnetic Field* ... 363
GUNDERSEN, ROY M. One-Dimensional Hydromagnetic Flow With Small Area Variations* ... 474
GUNDERSEN, ROY M. The Propagation of a Nonuniform Magnetohydrodynamic Shock Wave Into a Moving Monatomic Fluid ... 1421
GUNDERSEN, ROY. Shock Response to Upstream Disturbances* ... 226

HABERMAN, WILLIAM L. Subsonic Potential Flow Past a Sphere Inside a Cylindrical Duct* ... 356
HAINS, F. D., AND Y. A. YOLER. Axisymmetric Magnetohydrodynamic Channel Flow ... 143
HAKKINEN, R. J., AND NICHOLAS ROTT. Similar Solutions for Merging Shear Flows* ... 1134
HALL, J. GORDEN, ALAN Q. ESCHENROEDER, AND PAUL V. MARRONE. Blunt-Nose Inviscid Airflows With Coupled Nonequilibrium Processes ... 1038
HALL, J. G., T. C. GOLIAN, A. HERTZBERG, AND K. H. CHENG. Errata—Boundary-Layer Displacement and Leading-Edge Bluntness Effects in High-Temperature Hypersonic Flow* ... 355
HAMMITT, ANDREW G., AND JAMES E. BROADWELL. Transient Response of Fluid Systems* ... 877
HARTSELL, C. W., AND W. J. HAYS. Real-Gas Effects on Oblique-Shock Detachment Angles* ... 116
HASELTINE, W. R. Passive Damping of Wobbling Satellites: General Stability Theory and Example ... 543
HASSAN, H. A. Bremsstrahlung Effects on Specific Impulse in Electrothermal Propulsion Devices* ... 1005
HAYMAN, LOVICK O., JR., AND ROGER B. STEWART. A Technique for Determining the Nozzle-Flow Properties of Air in an Equilibrium, Nonequilibrium, or Frozen State* ... 245
HAYS, PAUL B. On a Distribution Function Satisfying the Local H-Theorem* ... 753
HERTZBERG, A., H. K. CHENG, J. G. HALL, AND T. C. GOLIAN. Errata—Boundary-Layer Displacement and Leading-Edge Bluntness Effects in High-Temperature Hypersonic Flow* ... 355
HESS, JOHN L. Calculation of Potential Flow About Bodies of Revolution Having Axes Perpendicular to the Free-Stream Direction ... 726
HEYMAN, R. J., AND S. J. FENSTER. Effect of Variable Heat of Recombination on Stagnation-Point Heat Transfer* ... 1267
HIDALGO, HENRY, R. L. TAYLOR, AND J. C. KECK. Transition in the Viscous Wakes of Blunt Bodies at Hypersonic Speeds ... 1306
HOFF, NICHOLAS J. General Formulas for Influence Coefficients of Thin Spherical Shells ... 174
HOFFMAN, GEORGE A. Optimal Proportions of Pressure Vessel Heads ... 1471
HOSOKAWA, IWAO. Addendum to the Lifting Problem of Thin Airfoils at Sonic Speed* ... 604
HOSOKAWA, IWAO. A Note on Application of Transonic Linearization to an Airfoil With A Round Leading Edge ... 1395
HOUBOLT, JOHN C., AND WILMER H. REED. Propeller-Nacelle Whirl Flutter ... 333
HOULT, CHARLES P. On the Inviscid Tail Efficiencies of Slender Configurations at Hypersonic Speeds* ... 748
HOYT, J. W. An "Inside" Hydraulic-Analogy Experiment* ... 99
HOYT, J. W. A Study of Jet Deflection by the Hydraulic Analogy* ... 752
HROMAS, LESLIE, AND LESTER LEES. Turbulent Diffusion in the Wake of a Blunt-Nosed Body at Hypersonic Speeds ... 976
HUANG, Y. K., AND NORMAN DAVIDS. Shock Waves in Solid Craters ... 550
HUFFINGTON, NORRIS J., JR. Comment on: "The Buckling Mode of a Tension Bar After the Load is Released," A. J. Gazda (Vol. 29, pp. 487–488)* ... 1128
HUGHES, W. F. The Electromagnetic Body Force in Magnetohydrodynamics* ... 347
HUME, JAMES R., AND VICTOR J. SKOGLUND. Theoretical Solution of a Transient, Fluid-Cooled Heat Generator ... 1156
HWANG, CHINTSUN. A Similarity Between Feedback Control Systems and Elastic Wave-Propagation Systems* ... 107

INMAN, ROBERT M. Consideration of Energy Separation for Laminar Slip Flow in a Circular Tube* ... 1014
INMAN, ROBERT M. Heat Transfer to Laminar Flat-Duct Slip Flow With Internal Heat Generation* ... 1266
INMAN, ROBERT M. On Porous-Wall Couette Flow Under Slip-Flow Conditions* ... 1123
INOUE, NOBUO. Direct Electrical Analog for Plastic States of Stress* ... 1130

JACKES, ARTHUR M. Performance and Force Coupling Effects Due to Turning Vanes in an Annular Jet* ... 1483
JACKSON, W. SCOTT. Special Solutions to the Equations of Motion for Maneuvering Entry* ... 236
JAFFE, P. Optimizing the Aft Configuration of a Passive-Entry Capsule* ... 1388
JAHSMAN, W. E., AND F. A. FIELD. Comparison of Theoretical and Experimental Creep-Buckling Times of Initially Straight, Centrally Loaded Columns ... 431
JAMES, CARLTON S., AND JAMES E. TERRY. Shock-Wave Profiles Over Ellipsoidal-Nosed Bodies in Hypersonic Flow* ... 1128
JAMES, ELEANOR M. A Method of Obtaining an Approximate Solution of the Falkner and Skan Boundary-Layer Problem* ... 234
JASTROW, ROBERT. Results of Experiments in Space (The Twenty-Fifth Wright Brothers Lecture) ... 377
JAWORSKI, WIKTOR. On the Inconsistency in Definition of the Effective Heat of Ablation* ... 348

JAZWINSKI, ANDREW H. Inequality Constraints in Steepest-Descent Trajectory Optimization* ... 1268
JOHNSON, ROBERT H. Shock-Wave Profiles of Sharp Wedges in Helium Flow at M-28.9* ... 229
JOHNSTON, GEORGE S. Weight of Ellipsoid of Revolution With Optimum Tapered Thickness* ... 1269
JONES, W. P. Research on Unsteady Flow (The Sixth Minta Martin Lecture) ... 249
JONSSON, V. K., E. M. SPARROW, AND G. B. MILLER. Radiating Effectiveness of Annular-Finned Space Radiators, Including Mutual Irradiation Between Radiator Elements ... 1291
JORDAN, PETER F. Stresses and Deformations of the Thin-Walled Pressurized Torus ... 213

KAGEYAMA, SYJI. A Force Normal to the Axis in an Asymmetric Supersonic Nozzle* ... 472
KALABA, ROBERT. Design of Minimal-Weight Structures for Given Reliability and Cost* ... 355
KALONI, P. N. Couette-Type Flow of a Viscoelastic Fluid Through Porous Walls* ... 1399
KANA, DANIEL D., ULRIC S. LINDHOLM, AND H. NORMAN ABRAMSON. Breathing Vibrations of a Circular Cylindrical Shell With an Internal Liquid ... 1052
KAYE, JOSEPH, S. WILLIAM GOUSE, JR., AND GEORGE A. BROWN. Some Effects of Injection of Foreign Gasses in a Decelerating Laminar Boundary Layer in Supersonic Flow ... 1250
KECK, J. C., HENRY HIDALGO, AND R. L. TAYLOR. Transition in the Viscous Wakes of Blunt Bodies at Hypersonic Speeds ... 1306
KEENER, EARL R. Angle of Attack and Sideslip From Pressure Measurements on a Fixed Hemispheric Nose* ... 1129
KEENER, EARL R. Prediction of Ogive-Forebody Pressures at Angles of Attack* ... 1013
KELLEY, JAMES H., AND ALLEN E. FUHS. The Interaction of Tungsten Arcs With Flowing Air* ... 488
KELLY, R. E. Quasi-Steady Viscous Flow Near the Stagnation Region of an Infinite Cylinder* ... 627
KEMPNER, JOSEPH, WILLIAM P. VAFAKOS, AND FRANK ROMANO. Clamped, Short, Oval, Cylindrical Shells Under Hydrostatic Pressure ... 1347
KENNEDY, ERNEST D. Comments on: "The Theory of Mixing of Fluid Streams," HAROLD J. HOGE (Vol. 29, pp. 118–120)* ... 609
Authors' Reply, HAROLD J. HOGE* ... 609
KENNET, HAIM. The Effect of Skin Friction on Optimum Minimum Drag Shapes in Hypersonic Flow* ... 1486
KERR, ARNOLD D. On the Instability of Circular Plates* ... 486
KING, HARTLEY H. The Diffusion of Injected Gas in Separated Flow* ... 473
KLEIN, BERTRAM. Application of a New Matrix Method to Vibration Analysis of Structures* ... 350
KLEIN, BERTRAM. Reply to Notes on Matrix Methods of Structural Analysis and Further Comments on the Inversion of Large Structural Matrices, R. MELOSH (Vol. 29, p. 365) AND C. H. SAMSON, JR. (Vol. 29, p. 373)* ... 1394
Authors' Reply, R. MELOSH* ... 1395
KLEIN, BERTRAM. A Simple Method of Matric Structural Analysis, Part VI—Bending of Plates of Arbitrary Shape and Thickness Under Arbitrary Normal Loading ... 306
KLEIN, BERTRAM. Use of Special Coordinates to Simplify Matric Structural Analysis* ... 1127
KLOSNER, JEROME M. The Elasticity Solution of a Long Circular-Cylindrical Shell Subjected to a Uniform, Circumferential, Radial Line Load ... 834
KNOX, EUGENE C. Comments on: "Transformation of Coordinate Axis Systems of Aircraft," H. L. ROTHMAN, AND M. PITTEL (Vol. 28, pp. 583–584)* ... 604
KNOX, RICHARD M. The Optimized Ejector-Nozzle Thrust Augmenter* ... 470
KNUTH, ELDON L. Summary of a Study of the Use of Reference States in Predicting Mass-, Momentum-, and Energy-Transfer Rates in Laminar Flows* ... 1131
KOMODA, HIROYUKI, AND ITIRO TANI. Boundary-Layer Transition in the Presence of Steamwise Vortices ... 440
KORK, J. Satellite Lifetimes in Elliptic Orbits ... 1273
KORNECKI, ALEKSANDER. Comment on Stresses and Deformations of the Thin-Walled Pressurized Torus, PETER F. JORDAN (Vol. 29, pp. 213–225)* ... 1000
Author's Reply* ... 1000
KOVAL, L. R. On the Free Vibration of Thin Clamped Cylindrical Shells Subject to Radial Pressures* ... 615
KUETHE, A. M., AND ROGER DUNLAP. Effects of Cooling on Boundary Layer Transition on a Hemisphere in Simulated Hypersonic Flow ... 1454
KULGEIN, NORMAN G. Analogy Between Turbulent Reacting Jets and Boundary Layers* ... 96
KUTSCHENREUTER, PAUL H., JR. Force-Balance Determination of Supersonic/Hypersonic Combustion-Inlet Performance Levels* ... 1389

LAIDLAW, W. R., W. W. BRYCE, R. E. COOPER, AND S. I. GRAVITZ. Development of a Quasi-Steady Approach to Flutter and Correlation With Kernel-Function Results ... 445
LAMBERT, R. F., AND D. H. TACK. Response of Bars and Plates to Boundary-Layer Turbulence ... 311
LARGE, E. Nose Shape for Minimum Drag in Hypersonic Flow* ... 98
LAURMANN, J. A. Small-Slip Solutions of the Viscous-Flow Equations* ... 360
LEE, F. A. Comment on: "Flutter Analysis of Circular Panels," J. V. RATTAYYA (Vol. 29, pp. 534–542)* ... 1123
LEE, LAWRENCE H. N. Inelastic Buckling of Initially Imperfect Cylindrical Shells Subject to Axial Compression ... 87
LEES, LESTER, AND LESLIE HROMAS. Turbulent Diffusion in the Wake of a Blunt-Nosed Body at Hypersonic Speeds ... 976
LEIGH, D. C. Comments on: "Improved Numerical Solutions of the Blasius Problem with Three-Point Boundary Conditions," W. J. CHRISTIAN (Vol. 28, pp. 911–912)* ... 625
Author's Reply* ... 625
LEISSA, ARTHUR W. A Method for Analyzing the Vibrations of Plates* ... 475
LEISSA, A. W. On the Nonlinear Strain-Curvature-Displacement Relationships for Thin Elastic Shells* ... 1381
LEISSA, A. W., AND F. W. NIEDENFUHR. A Study of the Cantilevered Square Plate Subjected to a Uniform Loading ... 162
LEITMANN, G. Note on a Class of Variational Problems in Rocket Flight* ... 1000
LEITMANN, G. Note on Some Optimum Rocket Trajectories* ... 1264
LENARD, MICHAEL, AND NICHOLAS ROTT. The Effect of Slip, Particularly for Highly Cooled Walls ... 591
LENARD, MICHAEL, AND NICHOLAS ROTT. Corrections and Comments on The Effect of Slip, Particularly for Highly Cooled Walls* ... 1391
LENARD, M. A Reaction-Rate Parameter for Gasdynamics of a Chemically Reacting Gas Mixture* ... 995
LEONARD, ROBERT W. On the Shear Stiffness of Fabrics* ... 349
LEONARD, ROBERT W., AND HARVEY G. MCCOMB, JR. Slanted Drop Cords in Inflatable Airmat Beams* ... 476
LEONDES, CORNELIUS T., R. E. ROBERSON, AND M. AOKI. Analysis of Synthesis of a Particular Class of Satellite Attitude Control System, Part I: System Analysis Results ... 1433

LEONDES, CORNELIUS T., AND ROBERT E. ROBERSON. Analysis and Synthesis of a Particular Class of Satellite Attitude Control Systems—Part II. Synthesis Results ... 1443

LEVE, HOWARD E. Element Reliability Over a Life History* ... 1400

LEVINSKY, ELY S. Application of Inequality Constraints to Variational Problems of Lifting Re-Entry ... 400

LEVITSKY, MYRON, AND BERNARD W. SHAFFER. Thermal Bond Stresses in Case-Bonded Viscoelastic Propellant Discs ... 827

LEWELLEN, W. S., M. L. ROSENZWEIG, AND D. H. ROSS. On Secondary Flows in Jet-Driven Vortex Tubes* ... 1142

LIBAI, A. On the Nonlinear Elastokinetics of Shells and Beams ... 1190

LIBBY, PAUL A. The Homogeneous Boundary Layer at an Axisymmetric Stagnation Point With Large Rates of Injection ... 48

LIBBY, PAUL A., AND ROBERT J. CRESCI. The Downstream Influence of Mass Transfer at the Nose of a Slender Cone ... 815

LIBBY, PAUL A., AND CONSTANTINO ECONOMOS. A Note on Transitional Heat Transfer Under Hypersonic Conditions* ... 101

LIBBY, PAUL A., AND HERBERT FOX. Helium Injection Into the Boundary Layer at an Axisymmetric Stagnation Point ... 921

LIN, Y. K. On Torsion Analysis of Multicell Tubes* ... 475

LIN, Y. K. Response of a Nonlinear Flat Panel to Periodic and Randomly-Varying Loadings ... 1029

LIN, Y. K. Stresses in Continuous Skin-Stiffener Panels Under Random Loading ... 67

LINDHOLM, ULRIC S., DANIEL D. KANA, AND H. NORMAN ABRAMSON. Breathing Vibrations of a Circular Cylindrical Shell With an Internal Liquid ... 1052

LOCK, MALCOLM H. A Note on the Application of the Quasi-Steady Supersonic Flow Theory to Flutter Analysis* ... 1133

LOGAN, J. G. On the Propagation of Transverse Disturbances in Rarefied-Gas Flows* ... 1011

LOH, W. H. T. Comments on: "The Limitations of Hydraulic Analogy," E. V. Laitone (Vol. 28, pp. 656–657)* ... 620

Comments. R. A. A. BRYANT ... 622

Author's Reply, E. V. LAITONE* ... 622

LOH, W. H. T. On Atmospheric Entry With Small L/D* ... 1016

LOH, W. H. T. On Exact Numerical and Approximate Analytical Solution for Ballistic-Re-Entry at Nearly-Zero-Degree Angle of Inclination* ... 495

LOH, W. H. T. A Second-Order Theory of Entry Mechanics into a Planetary Atmosphere ... 1210

LONDON, HOWARD S. Change of Satellite Orbit Plane by Aerodynamic Maneuvering ... 323

LONDON, HOWARD S. Comment on Lateral Range During Equilibrium Glide* ... 610

LOVE, E. S. Hypersonic Approximation of the Minimum Semiapex Angle Giving Subsonic Flow Behind an Attached Shock* ... 1124

LU, PAU-CHANG. Erratum—Free-Convection Magnetohydrodynamic Flow Past a Porous Flat Plate* ... 109

LYONS, W. C., JR., AND NORMAN W. SHEETZ, JR. Transition Measurements on Cones in Free-Flight Ballistics-Range Tests* ... 352

McCLOY, DONALD. The Construction of Stability and Frequency-Response Diagrams Using Vectors* ... 880

McCOMB, HARVEY G., JR., AND ROBERT W. LEONARD. Slanted Drop Cords in Inflatable Airmat Beams* ... 476

McLAFFERTY, GEORGE H., AND ROBERT E. BARBER. The Effect of Adverse Pressure Gradients on the Characteristics of Turbulent Boundary Layers in Supersonic Streams ... 1

McNITT, R. P. Free Vibration of a Damped Elliptical Plate* ... 1124

McRUER, DUANE T. A Feedback-Theory Analysis of Airframe Cross-Coupling Dynamics ... 525

MAEDER, P. F., AND G. F. ANDERSON. An Experimental Method for Measuring the Electrical Conductivity of High-Temperature Gasses* ... 1263

MAGER, ARTUR. On Squire's Test of the Compressibility Transformation* ... 752

MAHEY, DENNIS G. Leading-Edge Attachment in Transonic Flow With Laminar or Turbulent Boundary Layers ... 1034

MAJUMDER, S. R. On the Study of Stagnation Points on a Circular Cylinder in Presence of a Straight Wall in an Ideal Fluid* ... 502

MANN-NACHBAR, P. On the Role of Bending in the Dynamic Response of Thin Shells to Moving Discontinuous Loads ... 648

MARONNE, PAUL V., ALAN Q. ESCHENROEDER, AND J. GORDON HALL. Blunt-Nose Inviscid Airflows With Coupled Nonequilibrium Processes ... 1038

MARTIN, E. DALE. Note on the Three-Point Boundary-Value Problem for the Blasius Equation* ... 1133

MEHAFFEY, H. A., AND H. C. VETTER. Simplified Application of the Second-Order Shock-Expansion Method Using the Hypersonic Similarity Rule* ... 493

MEISSNER, CLAUS J. Direct Beam Stiffness-Matrix Calculations Including Shear Effects* ... 247

MEKSYN, D. Magnetohydrodynamic Flow Past a Semi-Infinite Plate ... 662

MELOSH, ROBERT J. Author's Reply* ... 103

MELOSH, ROBERT. Matrix Methods of Structural Analysis* ... 365

MENKES, E. G. A Note on Discontinuity Stresses in Cylindrical Shells* ... 619

MERZ, A., AND B. WALLACH. Four-Gimbel Platform Behavior Near 90° Pitch ... 479

MICKELSEN, H. P., JR., M. M. STANIŠIĆ, B. H. FETZ, AND F. M. CZUMAK. On the Flow of a Hydromagnetic Fluid Between Two Oscillating Flat Plates* ... 116

MIKAMI, KINYA, ARTHUR E. BRYSON, WALTER F. DENHAM, AND FRANK J. CARROLL. Determination of Lift or Drag Programs to Minimize Re-Entry Heating ... 420

MILES, JOHN W. Remarks on "Supersonic Panel Flutter of a Cylindrical Shell of Finite Length"* ... 115

MILLER, G. B., E. M. SPARROW, AND V. K. JONSSON. Radiating Effectiveness of Annular-Finned Space Radiators, Including Mutual Irradiation Between Radiator Elements ... 1291

MONTI, RODOLFO. Definition of Figure of Merit for Energy-Conversion Processes* ... 881

MORAN, JOHN P. Erratum—An Equivalence Principle for Water-Exit and -Entry Problems* ... 1007

MORDUCHOW, MORRIS, AND STANLEY P. REYLE. On Calculation of the Laminar Separation Point, and Results for Certain Flows* ... 996

MORETTI, F. J., AND H. E. BRANDMAIER. A Note on Havelock's Shallow-Water Wave-Resistance Curves* ... 357

MURPHY, J. S. Comments on: "A Theory of the Two-Dimensional Laminar Boundary Layer Over a Curved Surface," K. T. YEN AND K. TOBA (Vol. 28, pp. 877–884)* ... 366

Author's Reply, K. T. YEN* ... 367

NANDA, RATTAN SAGAR. Nonisothermal Flow Past a Flat Plate With Suction* ... 885

NAPOLITANO, L. G. On the Laminar Mixing of Annular Jets* ... 605

NEWMAN, MALCOLM, AND MARVIN FORRAY. Axisymmetric Large Deflections of Circular Plates Subjected to Thermal and Mechanical Loads ... 1060

NEWMAN, MALCOLM, AND MARVIN FORRAY. On the Post-buckling Behavior of Rectangular Plates* ... 754

NEWMAN, MALCOLM, AND MARVIN FORRAY. The Post-buckling Analysis of Heated Rectangular Plates* ... 1262

NEWMAN, MALCOLM, AND MARVIN FORRAY. Thermal Stresses and Deflections in Elastically Supported Plates* ... 611

NEWMAN, M., M. FORRAY, AND I. U. OJALVO. Another Comment on: "One-Dimensional Heat Conduction With Arbitrary Heating Rate," S. Y. CHEN (Vol. 28, p. 336)* ... 1126

NIEDENFUHR, F. W., AND A. W. LEISSA. A Study of the Cantilevered Square Plate Subjected to a Uniform Loading ... 162

OATES, GORDON C. Constant-Electric-Field and Constant-Magnetic-Field Magnetogasdynamic Channel Flow ... 231

O'CONNELL, R. F. A Digital Method for Redundant Structural Analysis ... 1414

OHLSSON, GUNNAR O. Partial-Admission Turbines ... 1017

OJALVO, I. U., M. NEWMAN, AND M. FORRAY. Another Comment on: "One-Dimensional Heat Conduction With Arbitrary Heating Rate," S. Y. CHEN (Vol. 28, p. 336)* ... 1126

OKAUCHI, KINGE. Dusty-Gas Flow Through an Oblique Shock Wave* ... 230

ORDWAY, DONALD EARL, AND PETER CRIMI. Flutter Analysis of a Supersonic Ring Wings ... 578

OSTRACH, SIMON, AND PHILIP R. THORNTON. Stability of Compressible Boundary Layers Induced by a Moving Wave ... 289

PAGE, ROBERT H. Flow Separation in Nozzles* ... 110

PAI, S. I. Gasdynamic Effects on Electric Current Density in Magnetogasdynamics* ... 483

PAN, H. H. Concerning the Method of Representing Concentrated Surface Forces* ... 106

PAPIRNO, RALPH, AND GEORGE GERARD. Classical Columns and Creep ... 680

PARKIN, BLAINE R. Munk Integrals for Fully Cavitated Hydrofoils ... 775

PARKS, P. C. Comment on Lyapunov and Pitch-Yaw Stability with Rolling* ... 1485

PARKS, P. C. Pitch-Yaw Stability of a Missile Oscillating in Roll Via the Second Method of Lyapunov* ... 874

PATEL, SHARAD A., FREDERICK V. POHLE, AND B. VENKATRAMAN. A Note on the Transient Temperature Distribution in an Orthotropic Sphere Due to Aerodynamic Heating* ... 628

PERLMUTTER, ADOLF A. Comment on Derivation of Angular Velocity Ratio for a Particular Despin System, H. J. CURFMAN, JR., T. B. MCKEE, and J. W. YOUNGBLOOD (Vol. 28, pp. 822, 823)* ... 879

Authors' Reply, HOWARD J. CURFMAN ... 879

PERLMUTTER, A. A. On the Aeroelastic Stability of Orthotropic Panels in Supersonic Flow ... 1332

PISTER, K. S., S. B. DONG, AND R. L. TAYLOR. On the Theory of Laminated Anistropic Shells and Plates ... 969

POHLE, FREDERICK V., B. VENKATRAMAN, AND SHARAD A. PATEL. A Note on the Transient Temperature Distribution in an Orthotropic Sphere Due to Aerodynamic Heating* ... 628

POND, HARTLEY L. The Effect of Entrance Velocity on the Flow of a Rarefied Gas Through a Tube ... 917

POZZI, A. Jets in a Medium of Different Properties* ... 471

POZZI, A., AND F. CONTURSI. Thermal Boundary Layer of a Stream Over a Flat Plate* ... 883

POZZI, A., AND P. RENNO. Slip Flow With Axial Pressure Gradient* ... 1393

PUNGA, VALDEMARS, AND R. G. CAMPBELL. Solution in Quadratures for the Trajectory of a Rocket in a Gravity Turn* ... 1125

RAHMAN, M. A. Approximate Design of Sharp-Cornered Nozzles* ... 481

RAHMAN, M. A. Approximate Determination of Position of Sonic Line for Blunt Body in Hypersonic Flow* ... 1485

RAHMAN, M. A. Determination of Orbit in Two-Body System* ... 1393

RAMAMOORTHY, P. A Generalized Porous-Wall "Couette Type" Flow With Uniform Suction on Blowing and Uniform Transverse Magnetic Field* ... 111

RATTAYYA, JASTI V. Flutter Analysis of Circular Panels ... 534

RAY, AJIT KUMAR. A Note on Separation in Quasi-Two Dimensional Laminar Boundary Layer Flow* ... 1481

RAY, AJIT KUMAR. A Note on the Similarity Solution for the Three-Dimensional, Incompressible, Laminar Boundary Layer* ... 1392

REECE, J. WILLIAM. Test-Section Conditions Generated in the Supersonic Expansion of Real Air* ... 617

REED, WILMER H., AND JOHN C. HOUBOLT. Propeller-Nacelle Whirl Flutter ... 333

REEVES, BARRY L., AND CHARLES J. KIPPENHAN. On a Particular Class of Similar Solutions of the Equations of Motion and Energy of a Viscous Fluid ... 38

REGAN, FRANK J. Roll Damping of a Fleet Ballistic-Missile Submarine* ... 230

REID, WALTER P. Linear Heat Flow in a Composite Slab ... 905

REISMANN, HERBERT. Reply to "Comment on the Temperature Distribution in a Spinning Sphere During Atmospheric Entry," R. L. SCHAPKER (Vol. 29, p. 999)* ... 1385

REISMANN, HERBERT. Temperature Distribution in a Spinning Sphere During Atmospheric Entry ... 151

RENNO, P., AND A. POZZI. Slip Flow With Axial Pressure Gradient* ... 1393

REYLE, STANLEY P., AND MORRIS MORDUCHOW. On Calculation of the Laminar Separation Point, and Results for Certain Flows* ... 996

RHODES, B. V., AND D. E. BLOXSOM. Experimental Effect of Bluntness and Gas Rarefaction on Drag Coefficients of Axisymmetric Shapes in Hypersonic Flow ... 1429

RHYMING, INGE L. On Slender Airfoil Theory for Nonequilibrium Flow ... 1076

RIDYARD, HERBERT W., AND ELSIE M. STORER. Stagnation-Point Shock Detachment of Blunt Bodies in Supersonic Flow* ... 751

RILEY, N. Laminar Jet Mixing of an Electrically Conducting Fluid in the Presence of a Magnetic Field* ... 624

ROBERSON, R. E., CORNELIUS T. LEONDES, AND M. AOKI. Analysis and Synthesis of a Particular Class of Satellite Attitude-Control System, Part I: System Analysis Results ... 1433

ROBERSON, ROBERT E., AND CORNELIUS T. LEONDES. Analysis and Synthesis of a Particular Class of Satellite Attitude-Control Systems—Part II: Synthesis Results. 1443

ROBERTSON, J. M., AND M. E. CLARK. The Drag of Elongated Bodies Over a Wide Reynolds Number Range ... 842

RODDEN, WILLIAM P. On Inverting Large Matrices by Partitioning and Crout's Method ... 1270

RODDEN, WILLIAM P., AND EDITH F. FARKAS. On Accelerating Convergence in the Iteration of Complex Matrices* ... 1143

RODE, JOHN E., AND VICTOR J. SKOGLUND. A Static-Pressure Probe for the Interaction Region of a Shock Wave and Boundary Layer* ... 1262

RODEAN, HOWARD C. Linearized Dynamics of a Nuclear Ramjet Missile 29

ROGERS, RUTH H. The Transition to Turbulence in a Boundary Layer on a Blunt Cone in Supersonic Flow* ... 501

ROM, JOSEF. Theory for Supersonic, Two-Dimensional, Laminar, Base-Type Flows Using the Crocco-Lees Mixing Concepts 963

ROMANO, FRANK, JOSEPH KEMPNER, AND WILLIAM P. VAFAKOS. Clamped, Short, Oval, Cylindrical Shells Under Hydrostatic Pressure 1347

ROSENZWEIG, M. L., D. H. ROSS, AND W. S. LEWELLEN. On Secondary Flows in Jet-Driven Vortex Tubes* 1142

ROSKAM, J. A Simplified Method to Identify and Cure Roll Coupling* 608

ROSS, D. H., M. L. ROSENZWEIG, AND W. S. LEWELLEN. On Secondary Flows in Jet-Driven Vortex Tubes* 1142

ROTHMAN, HERBERT L. Power-Spectral Analysis of a Reconnaissance Vehicle* 1387

ROTHMAN, HERBERT L., AND MAX CHERNOFF. Unsteady Frequency Response Functions for Use in Power Spectral Analysis 121

ROTT, NICHOLAS, AND R. J. HAKKINEN. Similar Solutions for Merging Shear Flows* 1134

ROTT, NICHOLAS, AND MICHAEL LENARD. The Effect of Slip, Particularly for Highly Cooled Walls 591

ROTT, NICHOLAS, AND MICHAEL LENARD. Corrections and Comments on the Effect of Slip, Particularly for Highly Cooled Walls* 1391

ROYCE, W. W., T. FUJITA, AND T. STRAND. Cruise Performance of Channel-Flow Ground-Effect Machines 702

ROZYCKI, R., AND S. J. FENSTER. Stagnation Point Heat Transfer in Partially Ionized Air* 1490

RYDER, FREDERICK L. Improvement on Gauss-Seidel Iteration of Simultaneous Equations* 1386

SACKMAN, J. L. A Remark on Transient Stresses in Nonhomogeneous Viscoelastic Materials* 1015

SACKMAN, JEROME L. A Uniqueness Theorem for a Nonlinear Maxwell Body* 240

SAELMAN, B. Effect of Wing Geometry on Volume and Weight* 1390

SAELMAN, B. Some Notes on the Optimum Design of Box Beams for Combined Strength and Stiffness* 497

SAKAO, FUJIHIKO. An Approximate Solution for Laminar Channel Flow of a Conducting Fluid under Transverse Magnetic Field* 246

SARASON, L., H. WEITZNER, AND E. CUMBERBATCH. A Magnetofluid-Dynamic Kutta-Joukowsky Condition* 244

SCHAPKER, RICHARD L. Comment on the Temperature Distribution in a Spinning Sphere During Atmospheric Entry, H. Reismann (Vol. 29, pp. 151–159)* 999

SCHAPKER, RICHARD L. On the Use of Duhamel's Equation for Heat-Conduction Problems* 883

SCHILE, RICHARD D. Asymptotic Solution of Nonshallow Shells of Revolution Subjected to Nonsymmetric Loads 1375

SCHRELLO, D. M. Dynamic Stability of Aerodynamically Responsive Satellites 1145

SCHULTZ, OSCAR T. Elementary Derivation of General Equations for Terrestrial Inertial Navigation 1324

SEIDE, PAUL. The Stability Under Axial Compression and Lateral Pressure of Circular-Cylindrical Shells With a Soft Elastic Core 851

SEIDE, PAUL. Calculations for the Stability of Thin Conical Frustums Subjected to External Uniform Hydrostatic Pressure and Axial Loads 951

SEIGEL, ARNOLD E. A Two-Inch Launcher for Aerodynamic Models* 1383

SERBIN, HYMAN. Conceptual Methods in the Theory of Thin, Elastic Shells* 1271

SERPICO, JOSEPH C. A Study of Creep Collapse of a Long Circular Cylindrical Shell Under Various Distributed Force Systems 1316

SHAFFER, BERNARD W., AND MYRON LEVITSKY. Thermal Bond Stresses in Case-Bonded Viscoelastic Propellant Discs 827

SHANLEY, F. R. Historical Note on the 1.5 Factor of Safety for Aircraft Structures* 243

SHANLEY, F. R. New Evidence Concerning the Origin of Fatigue Cracks as a Surface Phenomenon* 1135

SHARMAN, P. W. A Theoretical Interaction Equation for the Buckling of Circular Shells Under Axial Compression and External Pressure* 878

SHEETZ, NORMAN W., JR., AND W. C. LYONS, JR. Transition Measurements on Cones in Free-Flight Ballistics-Range Tests* 352

SHERWOOD, A. A. Experimental Stress Analysis in Three Dimensions* 112

SHIRTLIFFE, C. J., AND O. E. TEWFIK. On the Coupling Between Heat and Mass Transfer* 1009

SIH, G. C. On the Crack-Tip Stress-Intensity Factors for Cylindrical Bars Under Torsion* 1265

SIMMONDS, JAMES G. The Finite Deflection of a Normally Loaded, Spinning, Elastic Membrane 1180

SIMMONDS, JAMES G. The Transverse Vibrations of a Flat Spinning Membrane 16

SINNITT, C. S. Theoretical Prediction of the Transonic Characteristics of Airfoils 275

SKIDMORE, LIONEL J., AND HAROLD S. BRAHAM. Guidance-Error Analysis of Satellite Trajectories 1091

SKOGLUND, VICTOR J., AND JAMES R. HUME. Theoretical Solution of a Transient, Fluid-Cooled Heat Generator ... 1156

SKOGLUND, VICTOR J., AND JOHN E. RODE. A Static-Pressure Probe for the Interaction Region of a Shock Wave and Boundary Layer* 1262

SMETANA, FREDERICK O. Comments on: "Comparison of Flow-Direction Probes at Supersonic Speeds," F. W. Barry (Vol. 28, pp. 750–752)* 625
Author's Reply* 626

SNYDER, WILLIAM T. The Use of the Howarth Transformation in Turbulent, Compressible Flow* 235

SOLOMON, JAY M. First-Order Slip Effects on the Laminar Boundary Layer Over a Slender Body of Revolution With Zero Pressure Gradient* 1135

SPARROW, E. M., AND E. R. G. ECKERT. Sensitivity of Skin Friction and Drag to the Distribution of Suction or Blowing* 104

SPARROW, E. M., G. B. MILLER, AND V. K. JONSSON. Radiating Effectiveness of Annular-Finned Space Radiators, Including Mutual Irradiation Between Radiator Elements 1291

SPREITER, JOHN R. Theorems for Change of Volume and Moments of Volume of Elastic Tanks Subject to Arbitrary Internal Pressures* 1140

SQUIRE, WILLIAM. Comment on: "A Note on Two-Point Taylor's Series for Solving Ordinary Differential Equations," Maurice Fine (Vol. 28, pp. 671–672)* 353
Author's Reply, Maurice Fine* 354

SQUIRE, WILLIAM. An Experimental Test of Compressibility Transformations for Turbulent Boundary Layers* 237

SQUIRE, W. An Experimental Test of Compressibility Transformations for Turbulent Boundary Layers* 237

MAGER, A. Comment* 752
Author's Reply* 1261

SQUIRE, WILLIAM. Some Remarks on Similarity in Turbulent-Boundary-Layer Theory* 1002

STAHLER, ALFRED F. The Free-Surface Water-Table Analog of Compressible Source-Vortex Flow* 998

STANIŠIĆ, MILOMIR M. On the Hodograph Method in Magnetogasdynamics* ... 242
STANIŠIĆ, M. M., B. H. FETZ, H. P. MICKELSEN, JR., AND F. M. CZUMAK. On the Flow of a Hydromagnetic Fluid Between Two Oscillating Flat Plates* ... 116
STERNLING, C. V., AND C. A. SLEICHER. Asymptotic Eigenfunctions for Turbulent Heat Transfer in a Pipe* ... 109
STEWART, ROGER B., AND LOVICK O. HAYMAN, JR. A Technique for Determining the Nozzle-Flow Properties of Air in an Equilibrium, Nonequilibrium, or Frozen State* ... 245
STODDARD, F. J. Stagnation Point Viscous Hypersonic Flow* ... 1138
STORER, ELSIE M., AND HERBERT W. RIDYARD. Stagnation-Point Shock Detachment of Blunt Bodies in Supersonic Flow* ... 751
STOWELL, E. Z., AND THEIN WAH. A Unified Theory for Creep Buckling Under Normal Loads ... 658
STRAND, T. Inviscid-Incompressible-Flow Theory of Static Two-Dimensional Solid Jets in Proximity to the Ground ... 170
STRAND, T., W. W. ROYCE, AND T. FUJITA. Cruise Performance of Channel-Flow Ground-Effect Machines ... 702
STUIVER, W. A Design Study of Tubes That Are Loaded Circumferentially by Harmonically Varying Pressures* ... 1008
SUJOTA, H. L. The Effective Plate Width of Longitudinally Stiffened Plates at Plastic Buckling ... 269
SUZUKI, SHIN-ICHI. On the Empirical Modification Proposed by Kuhn for a Box Beam Subjected to Torsion* ... 629
SUZUKI, SHIN-ICHI. On the Stress Measurement of Sweptback Wing Structures by Resin Model* ... 117
SWAIN, ROBERT L. Expansion of an $n \times n$ Characteristic Stability Determinant* ... 630
SWAMY, V. S. NANJUNDA. A Note on the Design of a Two-Dimensional Contracting Channel* ... 246
SYLVESTER, RICHARD J. Buckling of Sandwich Cylinders Under Axial Load ... 863
SYLVESTER, RICHARD J. Membrane Volume Changes for Elliptical Domes ... 140

TACK, D. H., AND R. F. LAMBERT. Response of Bars and Plates to Boundary-Layer Turbulence ... 311
TALBOTT, R. M. Stimulation of Jackknifing Moments* ... 606
TANI, ITIRO. Steady Flow of Conduction Fluids in Channels Under Transverse Magnetic Fields, With Considerations of Hall Effect ... 297
TANI, ITIRO, AND HIROYUKI KOMODA. Boundary-Layer Transition in the Presence of Steamwise Vortices ... 440
TAYLOR, R. L., S. B. DONG, AND K. S. PISTER. On the Theory of Laminated Anistropic Shells and Plates ... 969
TAYLOR, R. L., HENRY HIDALGO, AND J. C. KECK. Transition in the Viscous Wakes of Blunt Bodies at Hypersonic Speeds ... 1306
TERRY, JAMES E., AND CARLTON S. JAMES. Shock-Wave Profiles Over Ellipsoidal-Nosed Bodies in Hypersonic Flow* ... 1128
TETERVIN, NEAL. The Application of the Reference-Enthalpy Method to Friction Formulas* ... 493
TEWFIK, O. E. On the Effectiveness Concept in Mass-Transfer Cooling* ... 1382
TEWFIK, O. E., AND C. J. SHIRTLIFFE. On the Coupling Between Heat and Mass Transfer* ... 1009
THOMAS, P. D. Air Emissivity and Shock-Layer Radiation* ... 477
THOMAS, P. D. Comments: "One-Dimensional Heat Conduction With Arbitrary Heating Rate," S. Y. Chen (Vol. 28, pp. 336–337)* ... 616
THORNE, C. J., AND R. W. CLAASSEN. Vibrations of a Rectangular Cantilever Plate ... 1300
THORNTON, PHILIP R., AND SIMON OSTRACH. Stability of Compressible Boundary Layers Induced by a Moving Wave ... 289
TIEN, C. L. On Hypersonic Viscous Flow Over an Insulated Flat Plate With Surface Mass Transfer ... 1024
TING, LU, ANTONIO FERRI, AND VICTOR ZAKKAY. On Blunt-Body Heat Transfer at Hypersonic Speed and Low Reynolds Numbers* ... 882
TOBA, KAORU. On the Numerical Solution of the Blasius Problem With Three-Point Boundary Conditions* ... 480
TOPPING, A. D. Comment on: "Shear Stiffness of Fabrics," Robert W. Leonard (Vol. 29, pp. 349–350)* ... 757
Author's Reply* ... 757
TRAMPOSCH, HERBERT. Theoretical and Experimental Investigation of Thermal Stresses in Hypersonic-Aircraft Wing Structures ... 719
TRAUGOTT, STEPHEN C. Some Features of Supersonic and Hypersonic Flow About Blunted Cones ... 389
TRIBUS, MYRON. Comment on: "Fundamentals of Boundary-Layer Heat Transfer with Streamwise Temperature Variations," M. A. Biot (Vol. 29, p. 558)* ... 1482
Author's Reply* ... 1483
TRUITT, R. W. Proposed System for the Direct Conversion of Re-Entry Thermal Energy Into Electric Energy* 478
TSIEN, VEE C., AND RONALD W. BEERY. Mathematical Analysis of Co-Rotating Nose Gear Shimmy Phenomenon ... 1462

VAFAKOS, WILLIAM P., JOSEPH KEMPNER, AND FRANK ROMANO. Clamped, Short, Oval, Cylindrical Shells Under Hydrostatic Pressure ... 1347
VAGLIO-LAURIN, ROBERTO. On the PLK Method and the Supersonic Blunt-Body Problem ... 185
VAN DRIEST, E. R., AND C. B. BLUMER. Boundary-Layer Transition at Supersonic Speeds–Three-Dimensional Roughness Effects (Spheres) ... 909
VASILIU, JOHN. Pressure Distribution in Regions of Step-Induced Turbulent Separation ... 596
VASILIV, JOHN. Turbulent Mixing of a Rocket Exhaust Jet With a Supersonic Stream Including Chemical Reactions ... 19
VENKATRAMAN, B., SHARAD A. PATEL, AND FREDERICK V. POHLE. A Note on the Transient Temperature Distribution in an Orthotropic Sphere Due to Aerodynamic Heating* ... 628
VETTER, H. C., AND H. A. MEHAFFEY. Simplified Application of the Second-Order Shock-Expansion Method Using the Hypersonic Similarity Rule* ... 493
VIDAL, ROBERT J. Aerodynamic Processes in the Downwash-Impingement Problem ... 1067
VIDAL, ROBERT J. The Influence of Two-Dimensional Stream Shear on Airfoil Maximum Lift ... 889
VINOKUR, M. Laminar Heat-Transfer Distribution on Oblate Ellipsoidal Noses in Hypersonic Flow* ... 113

WAH, THEIN, AND E. Z. STOWELL. A Unified Theory for Creep Buckling Under Normal Loads ... 658
WAITER, S. A., AND P. ROY CHOUDHURY. Correlation Equations for Determining the Equilibrium Conditions Behind a Strong Shock* ... 618
WALLACH, B., AND A. MERZ. Four-Gimbal Platform Behavior Near 90° Pitch* ... 479
WAN, K. S. The Inviscid Flow Field in the Wake of Hypersonic Bodies* ... 1488
WANG, KUO CHANG. Vortex Flow in a Dissociating Gas* 623
WARDLE, S., AND D. E. BOURNE. Heat Transfer Through Laminar Boundary Layers on Semi-Infinite Cylinders of Arbitrary Cross Section ... 460
WEINGARTEN, V. I. Effects of Internal Pressure on the Buckling of Circular-Cylindrical Shells Under Bending ... 804
WEINITSCHKE, HUBERTUS J. The Effect of Asymmetric Deformations on the Buckling of Shallow Spherical Shells* ... 1141

WEISS, DANIEL. Local Heat Transfer to a Yawed, Infinite, Circular Cylinder in Laminar, Compressible Flow* 482
WEISS, DAVID C. Maneuvering Technique for Changing the Plane of Circular Orbits With Minimum Fuel Expenditure* 368
WEITZNER, H., E. CUMBERBATCH, AND L. SARASON. A Magnetofluid-Dynamic Kutta-Joukowsky Condition* 244
WEN, LI SHU. Differential Expressions for Nearly Rectilinear and Rectilinear Closed Orbits 1102
WEN, LI SHU. A Unified Treatment of "Variation of Parameters" and "Differential Expressions" Methods in Trajectory Prediction and Error Analysis 61
WESTMANN, R. A. A Note on Free Vibrations of Triangular and Sector Plates* 1139
WHALEN, ROBERT J. Viscous and Inviscid Nonequilibrium Gas Flows 1222
WILLIAMS, DAVID. Comment on a Stiffness Matrix for the Analysis of Thin Plates in Bending* 102
WILSON, MERLE R., AND CHARLES E. WITTLIFF. Heat Transfer to Slender Cones in Hypersonic Air Flow, Including Effects of Yaw and Nose Bluntness 761
WILSON, R. E. Real-Gas Laminar-Boundary-Layer Skin Friction and Heat Transfer 640
WINER, WARD O. Boundary-Layer Energy Equation* .. 750
WING, L. D. Approximate Methods for One-Dimensional Heat-Flow Analysis 689
WITTLIFF, CHARLES E. Normal-Shock-Wave Parameters for Equilibrium Air* 1012
WITTLIFF, CHARLES E., AND MERLE R. WILSON. Heat Transfer to Slender Cones in Hypersonic Air Flow, Including Effects of Yaw and Nose Bluntness 761
WOODS, B. A. Comments on: "Supersonic Flow at the Surface of a Circular Cone at Angle of Attack," J. E. Willett (Vol. 27, pp. 907–912)* 481
Author's Reply* 482
WORTMAN, ANDRZEJ, AND ALPHONSO AMBROSIO. Stagnation-Point Shock-Detachment Distance for Flow Around Spheres and Cylinders in Air* 875
YAO, JOHN C. Buckling of Sandwich Sphere Under Normal Pressure 264
YASUHARA, M. Axisymmetric Viscous Flow Past Very Slender Bodies of Revolution 667
YEH, T. F. Viscous Torque in a Spherical Gas Bearing .. 160
YEN, J. T. Application of Hollow Cathodes to Hypersonic Research* 496
YIH, CHIA-SHUN, AND WALTER R. DEBLER. Formation of Rings in a Liquid Film Attached to the Inside of a Rotating Cylinder* 364
YOLER, Y. A., AND F. D. HAINS. Axisymmetric Magnetohydrodynamic Channel Flow 143
YU, YI-YUAN. Comment on Influence of Transverse Shear on Nonlinear Vibrations of Sandwich Beams With Honeycomb Cores, H. N. Chu (Vol. 28, p. 405)* .. 886
Author's Reply* 887
YU, YI-YUAN. Damping of Flexural Vibrations of Sandwich Plates 790
YU, YI-YUAN. The Effect of Thickness-Stretch Deformation on Extensional Vibrations of Sandwich Plates* 491

ZAKKAY, VICTOR, AND CLIFTON I. CALLAHAN. Laminar, Transitional and Turbulent Heat Transfer to a Cone-Cylinder-Flare Body at Mach 8.0 1403
ZAKKAY, VICTOR, AND ANTONIO FERRI. Measurements of Stagnation Point Heat Transfer at Low Reynolds Numbers 847
ZAKKAY, VICTOR, ANTONIO FERRI, AND LU TING. On Blunt-Body Heat Transfer at Hypersonic Speed and Low Reynolds Numbers* 882
ZEIBERG, SEYMOUR L. The Wave Behind an Oscillating Vehicle 1344
ZENDER, GEORGE W. The Bending Strength of Pressurized Cylinders* 361
ZIEMER, RICHARD W., AND STERGE T. DEMETRIADES. Acceleration of Plasmas by Continuous Linear Lorentz Forces* 603

✦ ✦ ✦